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### Editorial Notes.

IN this number we have the pleasure to insert the first part of a report of the latest meeting of the American Pharmaceutical Association, written expressly for the CHEMIST AND DRUGGIST, by Mr. Henry B. Brady, the President of the British Pharmaceutical Association. Mr. Brady was received at the St. Louis meeting to some degree officially, as a delegate from the pharmacists of Great Britain. His record of the proceedings includes much valuable pharmaceutical matter, and, besides, will be sure to interest both American and English readers as the result of the observations of one of the keenest, as well as one of the most scientific pharmacists in this country.

This is how the match tax works in France. Our information comes from *Le Moniteur des Produits Chimiques*. The National Assembly has fixed a tax of one centime per box on wooden, and one and a-half centimes on wax matches. Naturally, the manufacturers have added this tax to the wholesale price, which is easy enough to manage in quantity; but the retailer, who formerly charged five and ten centimes each (that is a halfpenny and a penny) respectively for the boxes of wooden and wax matches, finds himself in a dilemma. He has no wish to add to the burden, but he has still less desire to bear it himself. The coinage does not admit of his charging six and eleven and a-half centimes respectively, which would be the addition of the tax exactly, so he must needs fix his prices at ten and fifteen centimes. The ultimate result is that the Treasury gains on each box (taking the wooden matches as an example) one centime, while the public pays five centimes extra, the retailer pocketing the difference.

On page 306 of our last number, in the course of an article by Mr. Ince on some curious old pharmaceutical works, the printer's omission of certain ancient signs robs a sentence of all its interest. We reprint the paragraph with the signs included.

"No small amount of perseverance is necessary to discover the value of the symbols used in Græco-Latin works of this century, particularly as no constant system was employed. Thus we find <, Z, and \*, are all equivalent to a drachm. The student will allow that this is likely to cause embarrassment."

We need not wonder at the eagerness with which physicians and authorities in India examine every new remedy put forth as an antidote to the poison of a snake-bite, when we learn that in British India, including British Burmah, the deaths from snake-bite during the past three years amount to 25,664. This statement appears in an official report published in the *Gazette of India*. From that report we also learn that during the same period the deaths resulting from the attacks of all kinds of wild beasts in the same area numbered 12,554. The snakes killed more than twice as many as were slain by the tigers and all the other fierce forest rangers put together. Truly the serpent is still "more subtle than all the beasts of the field." But surely this fearful scourge will be moderated in some degree by some means. If wealthy British sportsmen were much imbued with that spirit of noble daring which we still fondly name "English pluck," they would in numbers seek in India a nobler amusement than pigeon-shooting or fox-hunting at home, by pitching their prowess and skill against the deadly enemies of the inhabitants of that land.

A COMMITTEE of twelve has just commenced its sittings at Berlin, under the presidency of Dr. Houssele, to draw up a new Pharmacopœia for the German empire. The committee includes four professors of Materia Medica, and medical councillors and apothecaries to represent the various States. The committee has also the assistance of experts, as Privat-Docens, Oscar Liebreich, Prof. Schwanert, etc. It has been determined, notwithstanding the opposition of the professors, to continue the adoption of the Latin language, although in South Germany the German has been long employed for this purpose. The Committee proposes to have the new Pharmacopœia printed by the 1st of January next; and although the time seems short, it does not follow that prompt decision and continuous labour will produce a worse book than the dilatory machinery which took nearly seven years to perfect the British Pharmacopœia.



THE only reported business of general interest transacted at the last meeting of the Pharmaceutical Council was the discussion of the Society's affairs at Edinburgh. This arose from a letter addressed to the Council by Mr. Henry Deane, who described exactly what he saw. From his letter it appears that the North British branch of the Pharmaceutical Society occupies two rooms at No. 16, Princes-street, situated along a narrow lobby and up two flights of stairs, which are available for one day only in the week. The library consists of about 300 volumes only; and the museum of drugs, chemicals, etc., excellent and carefully kept as they are, comprises but 450 specimens. The collection of specimens used for the purposes of examinations is defective and poor, and totally unfit for the end to be attained. In accordance with the suggestions of Mr. Deane, it was resolved that something should be done to correct this condition of affairs, and a committee was appointed to ascertain what fresh arrangements are required, and at what cost they can be carried out. We hope they will see how much, and not how little, they can spend. We have no wish to see any multiplication of examination centres in a little country like this. But it is very fitting that there should be an official branch of the Society at Edinburgh, which, for the credit of the whole body, should be handsomely subsidized. It is very desirable, too, that the Scotch chemists themselves should sink local jealousies, and endeavour to make the North British branch as important in fact as it is in name.

Soon after the news of the Chicago fire had reached New York, the druggists of the latter city convened a meeting, and appointed a committee to gather contributions in aid of the sufferers from that crushing calamity. Between the 10th and the 23rd of October, we learn from the *American Druggists' Circular*, they collected about £3,500, and it must be remembered that, besides that sum, many of the chief firms had also contributed handsomely to the public fund.

THE address of Mr. E. C. C. Stanford to the Glasgow Chemists' Association, which we publish in this number, and to which we have taken the liberty to affix a title, should be read by every chemist and druggist, old and young. The graphic picture presented in that address of the pharmacy of to-day, delineated by a series of brilliant sketches of the results of chemical and medical investigation, placed against the sombre background of the pharmacy of thirty or forty years ago, shows us most encouragingly what has been accomplished. And the sentences, crisp, sparkling, epigrammatic, but earnest withal, in which the duties of students were enforced, could not have been heard nor can be read without infusing some of that manly vigour of mind which may be cultivated, and which is essential to success. Mr. Stanford is one of the few pharmaceutical students who have "won the double event." In 1857 he took the medal at Bloomsbury-square for "Chemistry and Pharmacy," and also that for "Botany and Materia Medica," so that in addressing students his words carry the weight which scarcely half-a-dozen other men could have given them. For that very reason we regret that in the course of his lecture Mr. Stanford should have followed the lead of Mr. Mackay in advocating the separation of the examining and educational functions of the Pharmaceutical Society. "They will have to renounce the right of educating and then examining; the examinations must be conducted according to their rules; but the education must be open and free."

We shall not go over the ground again, except to point to the fallacy involved in this argument. Mr. Mackay was

cautious, and avoided any direct argument. Mr. Stanford is impetuous, and sacrifices logical accuracy to the temptation of finishing off a sentence in good style. The last clause of the sentence we have quoted can have no meaning until the Pharmaceutical Society compels every candidate for examination to be trained in its own laboratory. At present it is not so. Pharmaceutical education is as "open and free" as the wind. A student may acquire his knowledge at Jerusalem, if he chooses. The only stipulation is that it shall reach a certain standard. No great harm probably would come of the suggested change; but it is unwise to waste time and energy in agitating for a reform for which there is no necessity, and from which no advantage could result.

WE have by us a few specimen copies of the *Boston Journal of Chemistry*, for which we are agents in this country, and we shall be glad to send one, as far as they last, to probable subscribers to that journal. The journal is a very popular one in the United States, and deservedly so, for its writers, while they present articles on the various branches of science, are not above writing them in an interesting manner. The journal will be sent post free to English subscribers on receipt of five shillings transmitted through us for that purpose.

#### EDUCATION SCHEMES.

THERE is evidently a vague sort of notion going the round of pharmaceutical intelligence that somehow or another the Pharmacy Act of 1868 has involved the chemists and druggists, as a body, in a new set of responsibilities with regard to the technical education of the incoming and uprising generation of pharmacists. We claim to be as desirous as any contemporary, either journalistic or personal, to encourage all the brave and self-denying efforts which are being made to advance pharmaceutical education, but we think it a matter of some importance first of all to clear the field of any such delusion as that to which we have alluded. It is not well that apprentices should imbibe the notion, which they accept very readily, that it is the duty of the community of chemists and druggists to provide them with means for easily acquiring the special knowledge which the law requires them to possess. We separate entirely from these remarks the individual duty which a chemist and druggist adopts when he takes an apprentice. There is a limit to that; but at any rate it concerns nobody beside the master and pupil themselves. Our purpose is simply to sweep away any trace of the dangerous claim for educational advantages which some pharmaceutical students already set up. Far more important than any instruction is it that every fungus of pauperism should be clean rooted out of the mind of every pharmaceutical apprentice or assistant.

Of course no one can help giving honour to those who sacrifice their time and devote a considerable portion of their energies and talents to the service of the rising generation in this matter of education. But no one has the smallest atom of right to claim this from them, nor because they give it to claim a similar benefit from others. This we think should be clearly appreciated, for such an understanding will help us very materially to judge correctly of the various schemes which come before us, intended to raise up a race of high-class pharmacists.

We are led, therefore, first of all to lay down as an axiom that only such schemes of education as are likely to be profitable to those who conduct them have sound prospect of permanent success. This statement may not speak very



highly for the generosity of human nature, but statistics would probably show that when divided out into an average the generosity of human nature is only the small dust of the balance, and scarcely affects the calculation. At least, it is far more prudent not to estimate it than to base our calculations upon it entirely. The latter is the mistake into which, as we think, Mr. Edward Smith, of Torquay, has fallen in a scheme of provincial education which he has lately submitted. He starts with what, as we say, we also regard as an erroneous assumption, implied though not expressed, that it is a *duty* devolving on chemists and druggists as a body to provide means of education for the students of the same profession; and then he proceeds to sketch out a plan which, if our notions are correct, could not stand upright for six days. He would form local associations who are to carry on the teaching of "elementary chemistry, pharmacy, and botany, so arranged as to illustrate as much as possible the usual every-day work of apprentices—practical groundwork with just a sufficient tinge of theory to make the study interesting, and to excite the mind of an intelligent youth." "*The form and manner of doing this work,*" Mr. Smith very prudently adds, "*must, to a great extent, be left to local associations.*" If Mr. Smith will for a moment consider the nature of this work, far more arduous in small towns than in large ones, and if he will consider too that to carry out his scheme thoroughly some ten thousand local associations must be established, for we presume one will be demanded in every parish at least, he will see that he has suggested a rather heavy work for some one to organize his ideas. And this work which, to put it moderately, would require a teacher of Dr. Arnold's calibre in each parish, is to be a labour of love. The local associations are to affiliate themselves to the Pharmaceutical Society by payment of a nominal annual fee, and their expenses are to be met *partly* by subscriptions of the students and partly by "local monetary efforts," the balance to fall on the Pharmaceutical Society. Finally, as a reward to the students for their gracious acceptance of the advantages provided for them, the Pharmaceutical Society is to send its examiners round once a year to twelve or twenty centres, there to conduct examinations with no meaning attached to them, except that prizes are to be awarded to the candidates who pass the best. Mr. Smith may well describe his plan as "but crudely developed;" and we think he did well to add that it "has in it the elements of a sound, practical, and comprehensive system of provincial education;" for he will probably meet with no other competent critic who will pay it the same compliment.

According to Mr. Schacht's estimate some 3,000 apprentices enter the trade throughout Great Britain annually. They do so with their eyes open, knowing that before they can commence business they must pass certain examinations. It is not by any means impossible that with diligence they can by the end of their apprenticeship acquire sufficient knowledge to enable them to pass the required examinations. In London and other large towns, where it pays to provide means of education, they have special opportunities of study. If none such are attainable they must do the best they can without them. But they must go to the mountain; the mountain will not come to them. If there are enough of them to form a class and get a teacher, let them take Mr. Schacht's advice, and affiliate themselves to the Government science classes, and take the grant which is in such cases provided. But let them not expect or wish for the charity of the body of chemists and druggists. All that a man asks for is a fair field and no favour.

One word more on a subject to which we have before alluded, and which arises naturally in the consideration of

this subject. We refer to the education of apprentices before their apprenticeship. If there are anything like 3,000 youths entering the trade annually, it does seem extremely likely that it would be a profitable speculation for a competent gentleman to propose to undertake the education of some of these, with a view to their after pursuits. It is not too much to say that at present scarcely 50 per cent. of those who enter the trade are at that period competent to pass the preliminary examinations. We should not consider any gentleman competent for the position we have indicated if he sent into the trade 2 per cent. of his pupils unable to pass that examination. And he might, with no injury to the general requirements of education, implant so much acquaintance with elementary chemistry and botany as should arouse an interest in the minds of intelligent youths in those subjects, thus giving them a good start on the path towards higher honours. It seems to us that such an education, ably carried out, would be a mutual benefit, and as such it would be comprehended in the definition we have given of those schemes likely to prove permanently successful.

[The above article was in type when we received from the Principal of the Hereford Proprietary School a prospectus of that institution, from which we find that the suggestion just hinted at is there expressly carried out. We really cannot be expected to *recommend* the school, for we know absolutely nothing of it, except what we have related. But we have very great pleasure in calling the attention of chemists to the existence of a school where an education may be had especially preparatory for a boy's after-life as a pharmacist.]

#### FRIENDLESS.

THE political world has lately been amused with the revelation of one of the most harmless and absurd conspiracies which have ever been directed against the long-suffering British Constitution. Conservative peers and "representative working-men" have been trying to combine, in the vain hope that the mixture might turn out a universal panacea for all social and national grievances. Hope or despair may have suggested this movement, on which, however, we need not further comment. We mention it to introduce the inquiry, Who are *our* friends? The extremes of society meet, but who cares for those between—the backbone of the nation—the middle classes? Once a year the Chancellor of the Exchequer thinks of them, and he knows that when all other resources fail, an extra million or two can always be squeezed out of them. But who is their faithful representative? Who cares to defend their interests either in Parliament or out of it? And in default of such champions, what organization have they formed among themselves? The "representative working man," whose only claim to the title is often dirty hands and dirty linen has plenty of patrons who treat him as a pet or a "problem." The trading classes, of course, want no such treatment, but they ought to have some means of making themselves heard when they have a grievance; and if they can find the means in no other way, they must make it for themselves. Once more we refer to the Civil Service Co-operative Stores. Again the balance-sheet of this Association has been published, and again a great profit has been announced. We fully believe that the managers of this Association are acting in direct contravention of the law. They are civil servants of the Crown, and it is only by a quibble that they can escape the imputation that they are at the same time carrying on



a trade for profit, a course which the law forbids. This question we hope to see tried; and if the Metropolitan and Provincial Association for the Defence and Advancement of Trade Interests, which we introduced to our readers a month or two back, is really catholic and in earnest, we can but wish it the best success. The quietness, not to say secrecy, with which it conducts its business, however, is not, in our opinion, a promise of its future usefulness. Still waters used to run deep, but in those days still waters soon become stagnant pools. We have lately heard of an individual instance which illustrates the importance of some action being taken. A certain Marquis of enormous wealth, derived mainly from London property, which has been vastly increased in value by the enterprise and energy, not of himself or his ancestors, but of the trading classes of the metropolis, has caused letters to be sent to those tradesmen with whom he has hitherto dealt, informing them that if they wish to continue to supply his household, they must be willing to do so at co-operative prices. It would need many individuals like this very noble Marquis to bring on the catastrophe; but it may be worth the consideration of political economists whether a system whose tendency is to abolish the middle classes, and to leave little between a baronet and a "representative working man," is really a system which adds to the strength and the welfare of the nation.

#### THE AMERICAN PHARMACEUTICAL ASSOCIATION.

*St. Louis Meeting, September, 1871.*

BY HENRY B. BRADY.

ST. LOUIS is but twelve hours from Chicago, and twelve hours represents but a trifling journey in a country where railway travelling is so often spoken of in terms of days, if not of weeks; it is, in point of fact, just about as far as we, here in Newcastle, are from London.

It was on the evening of the 11th of September that our friend, Professor Ebert, little altered since we saw him amongst us four or five years ago at the Pharmaceutical Conference at Dundee, mustered the Chicago contingent of the members of the American Pharmaceutical Association on the platform of the Illinois Central Railway Depot. The party numbered perhaps a dozen, and of these, two were British subjects; Mr. Saunders, of Ontario, representing Canada—one in whose hands the credit of pharmacy in the Dominion is ever safe—and the writer hereof, who was supposed to represent the Old Country. There were also two ladies, not members of the Association. A monotonous journey seemed therefore impossible. Nevertheless, travelling in a "sleeping-car," after its occupants have once concluded that it is time to "turn in," cannot be a very lively experience, and I should be compelled to draw on imagination were I to attempt any description of the scenery of central Illinois. Early in the morning, before we were quite sure whether it was time to get up, we found ourselves at the terminus on the east bank of the Mississippi, opposite St. Louis, and between omnibus and steamboat our destination was soon reached. At the Southern Hotel we found a number of members from the Eastern States already assembled and waiting to welcome fresh arrivals. Breakfast, even so well earned, could not last for ever, and plenty of time remained before the commencement of the business of the Convention to learn something of local geography. Strangers to the city, like the writer, were startled with its extent and business activity. Chicago and St. Louis, the two great cities of the West, may well be a wonder to Europeans—two young giants they are, born of the present

generation, with already, either of them, some three or four hundred thousand inhabitants—rivals in commerce, in wealth, and in enterprise. May Chicago soon recover the terrible blow that has overtaken her!

The building in which the meetings of the Association and the exhibition of pharmaceutical objects were held is one of those large blocks one often sees in American towns, devoted in part, at least, to the requirements of public education. The meeting-room was large and commodious, but with some drawbacks in respect to seeing and hearing. Any minute or detailed account of the proceedings at the various sessions of the Convention would occupy more space than could be properly spared in these columns, and might not yield adequate interest to the English reader. The memoranda in my own note-book were not made with any reference to a paper like the present, so I propose to use to some extent the excellent abstracts in the report contained in the *Druggists' Circular* (New York), offering my best apology to my friend, Mr. P. W. Bedford, for taking what was his.

The opening meeting was held in the Hall of the Polytechnic Institute, on Tuesday, September 12th, at 3 p.m., and the sessions were continued by adjournments until Friday, the 15th of September. There was a large attendance of members; indeed, on looking round those present, as they were pointed out to me by a friend at my side, I seemed only to miss one whose name was familiar in connection with the advance of pharmaceutical science in the New World—Dr. E. R. Squibb, of Brooklyn. His unavoidable absence was a matter of regret to all. The first session was called to order by Prof. J. M. Maisch, Permanent Secretary, in the absence of the President, R. H. Stahler, and some others of the higher officials.

Prof. J. Faris Moore, of Baltimore, was nominated as President *pro tem.*, and unanimously elected.

After a few introductory remarks from the Chairman, embodying a cordial welcome to all attending the meeting, the roll of members present was called, and a Committee to examine the credentials of delegates appointed.

Whilst this Committee was out, the President read a letter from Mr. W. W. Stoddart, late President of the British Pharmaceutical Conference, introducing to the Association, as a representative of the Conference, one of their members who at Edinburgh had expressed an intention of attending the Meeting at St. Louis. The letter was very warmly received, and the Englishman, after a few pleasant words of introduction from the Chair, not less warmly greeted. If one may believe that most genial of shorthand writers, Mr. Slade, the following was somewhat the tenor of the visitor's reply, with a few trifling corrections supplied from memory:—

"I did not expect, sir, to be called upon so early to express to you the feeling which I was charged to convey from the British Pharmaceutical Conference—the message of fraternal sympathy and of greeting to this large and important Association. We hold this Association as in some sort the exemplar which we have endeavoured to follow in establishing the Conference over which I have now, unworthily, the honour to preside.

"It had long been thought that the Central Society which we had in London was sufficient to provide for the wants of the British pharmacutists in respect to intercommunication and the like; but it seemed to some amongst us, eight or nine years ago, that you had in America an organization which would supplement in a very remarkable degree, if applied to England, the efforts of the Pharmaceutical Society of Great Britain towards the advancement of pharmacy and the well-being of pharmacists. We followed in your steps, therefore, as nearly as we could, and with only such modification as the nature and condition of pharmacy in England, as compared with that in America, necessitated, and endeavoured to form an Association very much resembling that which you have here. How far the 'Conference' so established has been successful may be gathered not only from the increasing roll of members, but by the amount of good work which has proceeded from its labours.



"It was my happiness that the preliminary meeting of the British Pharmaceutical Conference should be held in my native town; and from that moment to the present I have missed no step in its career. I do not propose at this moment, when time is so valuable to you, to enlarge either upon our present condition or our past history. I have merely gone thus far in order to show how much I feel we are indebted to you, and with how much fraternal sympathy I can meet you. And I must also thank you for the very hearty and very kind reception which I have met with, not only here in St. Louis, but ever since I landed on the American continent. I take the honour you have done to me this day, in making me one of your members, as a compliment rather to the British Pharmaceutical Conference than to myself; for, to a certain extent, I represent them officially. For them, and on their behalf, I thank you; personally, it becomes me to acknowledge the distinction in simple humility."

Professor MAISCHE then read invitations from the officers of the Public School Library and the Mercantile Library Association, to visit those institutions, which were accepted; as also an invitation to visit the American Wine Company's vaults.

The Committee on Credentials reported the following delegates accredited to this meeting:—

*Massachusetts College of Pharmacy.*—Professor G. F. H. Markoe, Messrs. Charles J. Eaton, Joel S. Orne, Charles H. Price, J. B. Patten.

*Alumni of Massachusetts College of Pharmacy.*—Charles A. Tufts, George H. Beale, Thomas Doliber, George E. Raymond, J. Howes Dyer.

*New York College of Pharmacy.*—P. W. Bedford, F. V. Heydenrich, E. L. Milhau, M. L. M. Peixotto, William Wright, junior.

*Alumni of the New York College of Pharmacy.*—John Best Henry C. Porter, J. W. Ballard, H. Osborne, George C. Close.

*New Jersey Pharmaceutical Association.*—E. P. Nichols, M.D., C. W. Badger, Henry D. Motte, Julius Fehn, J. R. Mercein.

*Newark Pharmaceutical Association.*—C. H. Dalrymple, C. W. Badger, William M. Littell, Alexander Haverstein, A. M. Mills, M.D.

*Philadelphia College of Pharmacy.*—Professors John M. Maisch, E. Parrish, William Proctor, junior, Messrs. Evan T. Ellis, Joseph P. Remington.

*Alumni of the Philadelphia College of Pharmacy.*—Professor E. Parrish, William H. Raser, C. F. Jefferson, R. M. Shoemaker, A. P. Brown.

*Maryland College of Pharmacy.*—Professor J. F. Moore, J. F. Hancock, Louis Dohme, J. N. Potts, J. A. Webbe.

*Alumni of the Maryland College of Pharmacy.*—Professor J. F. Moore, J. F. Hancock, Louis Dohme, J. S. Conrad, C. R. Beck.

*Columbia Pharmaceutical Association.*—Z. W. Crumwell, J. W. Nairn, J. D. O'Donnell, G. M. Howard, Z. D. Gilman.

*Louisville College of Pharmacy.*—P. P. Sutton, T. E. Jenkins, M.D., C. L. Diehl.

*St. Louis College of Pharmacy.*—Enno Sander, M. W. Alexander, Hubert Primm, G. T. Chamberlain, Justin Steer.

*Chicago College of Pharmacy.*—Professor A. E. Ebert, George Buck, J. W. Ehrmann, E. H. Sargent, N. Pierrepont.

*University of Michigan.*—Professor A. B. Prescott, M.D.

*Kansas College of Pharmacy.*—E. T. Porter, George Leis, Joseph Harrop, R. J. Brown, Robert Parham.

*Ontario (Canada) College of Pharmacy.*—William Saunders.

After the reading of this report, the question was raised whether the delegate from the University of Michigan was entitled to a seat as a delegate. It was contended that that institution was neither a college of pharmacy nor a pharmaceutical association, and therefore not entitled to representation.

After considerable discussion, it was agreed that the Report of the Committee on Credentials should be accepted, except that portion which referred to the delegate from the University of Michigan. It was further resolved that a committee of one from each delegation be appointed by the Chair to consider the propriety of admitting the delegate from the University of Michigan, and report at the first session of the following day.

The Executive Committee brought in the names of seventy-nine candidates for membership, who were properly vouched for and had complied with the constitution and by-laws. Tellers were appointed by the Chair, and a ballot being taken, they were declared elected.

The Reports of Committees were then called for, and they were read by title, except those of the Executive Committee and Permanent Secretary, which were taken in full. That of the Executive Committee gave an account of their various duties during the past year, together with a statement of receipts and expenditure on account of publishing the last volume of "Proceedings." It contained also a short obituary notice of deceased members.

The Report of the Permanent Secretary was devoted to details relating to the internal economy of the Association, the alterations in the roll of members, exchange of "Proceedings" and the like, noticing also such legislation affecting pharmacy as had been brought about in the various States of the Union since the previous meeting.

The reports were accepted, and referred for publication.

Prof. Parrish, in commenting on these reports, desired to add his tribute to the departed worth of the three members whose decease had been mentioned by the Executive Committee. In fitting words he alluded to the labours of the late Eugene L. Massot, of St. Louis, well known to those who had met him at their annual gatherings—a man genial in his associations, upright in all his dealings, beloved by all who knew him. He had looked forward to his words of welcome to-day, but he was no more, and the thought of sadness at his absence steals over those who have come from a distance to this city, his home.—William Taylor, though known to a smaller number, was a personal friend of the speaker. Though for many years a pharmacist, he had held the position of Coroner in Philadelphia. He was an excellent and conscientious man.—Ferris Bringham, of Wilmington, Delaware, was well known to all who attend the meetings of the Association, and his scientific reputation might safely rest upon his contributions to pharmacy. In his own city he was known and beloved by every one, and was foremost in good deeds among the poorer class of the community. Whilst engaged in preparing oxygen for a lecture he was about to deliver to the mechanics of Wilmington, his retort burst, and he suffered injuries which resulted in death after two days of lingering suffering. His memory will be ever cherished by his friends, and their sympathy cordially extended to the bereaved widow thus suddenly deprived of his loving care.

A committee was next appointed to nominate officers for the ensuing year, consisting of one member from each of the accredited associations and colleges, and five chosen from the meeting at large.

After a further election of new members, the address of the retiring president, Dr. Richard H. Stabler, of Alexandria, Va. (who was not present at the meeting), was read. This address was chiefly devoted to a review of the growth and work of the Association since its organization in 1852, and offered some suggestions with a view to its increase in those portions of the Union where there were but few members. Allusion was made to its financial condition, past, present and future, and anticipations were indulged in as to what might be expected from the Association when its financial position was secured. Reference was made to pharmaceutical legislation, new remedies, the proposed International Congress at St. Petersburg, in 1872, and other matters.

A committee to report on the exhibition of drugs, &c., was appointed, and the meeting adjourned till the following day (Wednesday), at 9 a.m.

A reception in the evening at the Southern Hotel, graced by the presence of many ladies, closed the proceedings for the day.

#### SECOND SESSION—Wednesday, Sept. 13.

The Association met shortly after 9 o'clock, and was opened by reading the minutes, which were adopted.

The credentials of the delegates of the Mississippi Pharmaceutical Association were presented, and Messrs. W. P. Creacy, of Vicksburg, and Matthew F. Ash, of Jackson, were accorded seats as representatives.

The President *pro tem.*, Professor J. F. Moore, stated that delegates were present from eight new organizations, and assured them of a cordial welcome.



The bodies alluded to were as follows:—Alumni Massachusetts College of Pharmacy; Alumni New York College of Pharmacy; Alumni Maryland College of Pharmacy; Columbia (Washington) Pharmaceutical Association; Louisville College of Pharmacy; Kansas College of Pharmacy; Ontario College of Pharmacy; Mississippi Pharmaceutical Association.

The following report of the Committee on the delegate from the University of Michigan, was read and adopted. We quote it in full, as we may have to refer to it subsequently:—

*"To the American Pharmaceutical Association.*—The Committee appointed at the session of the 12th inst., to consider the admissibility of the delegate from the School of Pharmacy of the University of Michigan, have duly considered the subject, and respectfully submit the following report:—

*"The Committee on the credentials of the delegate from the University of Michigan, having considered the subject in its various relations, are united in the conclusion that the University is not, within the proper meaning of our Constitution and By-Laws, a College of Pharmacy; it being neither an organization controlled by pharmacists nor an institution of learning, which, by its rules and requirements, insures to its graduates the proper practical training to place them on a par with the graduates of the several colleges of pharmacy represented in this Association. We therefore recommend that the credentials of the delegate from the University of Michigan be returned to him, with a copy of this report."*

The Treasurer, Mr. Charles A. Tufts, then read his Annual Report, which was received, and referred to a committee of auditors. His statement showed a most encouraging state of the finances. Heretofore the Association had suffered from constant deficit; but this report presented a balance in hand of 1,200 dols. or more, and with the financial reforms which come into operation this year, and the large accession of new members, the Treasurer anticipated a happy future in respect to pecuniary matters.

The Committee on Nominations presented their report, recommending the following appointments:—

*President*—Enno Sander, St. Louis, Mo.

*Vice-Presidents*—C. Lewis Diehl, Louisville, Ky.; G. F. H. Markoe, Boston, Mass.; Matthew F. Ash, Jackson, Miss.

*Treasurer*—Charles A. Tufts, Dover, N. H.

*Secretary*—John M. Maisch, Philadelphia.

The further nominations for the *Executive Committee*, the committees on the *Progress of Pharmacy*, on the *Drug Market*, on *Scientific Queries*, on *Business*, on *Unofficial Formulae*, and on *Adulterations and Sophistications*, need not be particularized.

At the meeting of the Association in 1870, Mr. Thomas S. Wiegand engaged to prepare an Index of the last ten volumes of the "proceedings." This work being accomplished, it was, on behalf of Mr. Wiegand, presented to the Association.

The Chairman of the Committee on the Drug Market, Mr. John McKesson, jun., read a lengthy and very interesting report, which was accepted, and referred for publication.

A few of the opening remarks are appended. To these we can only add that it gave a careful and interesting account of the demand, supply, statistics, and fluctuation in value of the principal foreign and domestic drugs and chemicals, and that no epitome of the report would do the author justice:—

*"The Committee on the Drug Market, appointed by the American Pharmaceutical Association at their last annual meeting, has to report that the members have had no opportunity for united action, and the chairman will therefore present a statement of the importations of the entire country, as well as the market changes of the city which he is happy to represent.*

*"New York collects and despatches most of the drugs for the United States, and St. Louis is destined to be the great medium for distribution through the western country. New York stands second only to London in its controlling power over trade and commerce. Capital to-day yields a far greater influence over the world than military force ever did. It is but a few years since Napoleon, in the zenith of his power, contemptuously called the English a nation of*

*shopkeepers, while a short time has proved that his power, founded upon arms, was but a shadow which faded before the light that sprang from the influence of trade. (Applause.)*

*"To supply the demands of trade, the telegraph wires cross both earth and sea, transmitting the shopman's orders. His money has built the railroads and steamers which bring to him goods from the opposite side of our globe in less time than it would have taken thirty years ago to send a case of rhubarb from New York to St. Louis. During the present year our Government, by allowing many articles to enter the country free of impost, has burst some of the bonds that fettered the busy hands of commerce. This has caused a greater variation in the quotations of crude drugs than has been experienced for a number of years. A comparative table of prices for reference is appended to the report.*

*"During the last session of Congress an elaborate tariff bill was presented, in concert with the manufacturing interests, by which foreign goods were admitted to the free lists, and the duties on manufactured articles were eliminated; and the result is—as an important example—that quinine, which was advanced to 45 per cent. when a duty of 20 per cent. more was imposed upon cinchona bark for revenue purposes, still pays 45 per cent. in place of 30 per cent., as a proposed concomitant of admitting crude bark free. The dispensations of Congress are apt to be mysterious, but we regard the present amended tariff—with its more unjust discrimination in favour of a few manufacturers—as an improvement on the old one."*

Mr. McKesson stated that general retail business had increased in the United States, while there had been a perceptible decline in the sale of fancy goods. During the war between France and Germany there arose a great deal of speculation, which had the effect of raising the prices in drugs, and now the bonded stock had been put upon the country, and drugs are assuming their proper prices."

The report was well received, and commanded the close attention of all present.

The Committee on *Queries* reported that a list of fifty-two queries had been prepared, which were read, as also the names of those who had accepted them to report upon at the next annual meeting.

The report of the Committee on *Adulterations* followed—too elaborate a document to be entered upon at the end of an already lengthy article. We propose, therefore, to return to it next month.

A gloom was thrown over the whole meeting by an announcement, which appeared amongst the evening telegrams, reporting the death of Professor Bentley. It is easy now to trace the foundation of the report, but not so easy to account for its circumstantial character. To the English traveller the "latest news" columns in American papers, especially those relating to European affairs, are amongst the most remarkable products of home industry.

Under ordinary circumstances it would have been mortifying to have wasted regrets over false news, but in the present case the delight of finding it incorrect seemed to leave no room to care for the past, and one may now reflect with pleasure on the evidence it brought to light of the high esteem in which the Professor is held amongst the pharmacists of America.

## CONTINENTAL CHEMISTS.

### SCANDINAVIA.

**W**HETHER it is strictly correct in a geographical sense to include Norway, Sweden, and Denmark, as a part of the European continent, is not absolutely clear; but it is certain that in a fashionable sense they would not be so included. In Camden-town, by "The Continent" is understood Paris and Boulogne and a bit of the Rhine, some times extending a little into Switzerland. Cavendish-square goes somewhat beyond this, and takes in Italy and the best part of Germany. But both would draw the line at the Pyrenees on one side, and Schleswig-Holstein on the other. So it came to pass when hungry Prussia opened her mouth and swallowed up those two last-named unfortunate



provinces, and England stood by indignant, but passive, her angry sons were ready enough to stigmatise the act as a national crime, but the majority of them were sorely puzzled to know whether it was a big crime or a little one. But the Scandinavian kingdoms may complacently suffer their isolation from the society of their Continental neighbours, and if they are not engaged just now in the disreputable quarrels and murderous tumults which "make history," they may justly and proudly content themselves with the still unsoiled laurels won by the prowess of their ancestors, when the mushroom States, which now call themselves the "Great Powers," lay grovelling at the feet of the Cæsars.

These Norsemen, too, might make another boast, but perhaps they hardly appreciate the honour as they should; they are the fathers of the Anglo-Saxon race, and unless we are destitute of all natural affection we can hardly fail to interest ourselves in their social and political welfare.

The pharmacy of Norway, Sweden, and Denmark, is in each case under Government regulations. In each country these vary slightly, but not sufficiently to be worthy of elaborate distinction. And indeed in all, the laws which regulate pharmacy, and the practice of pharmacy itself, so nearly correspond to the laws and practice of North Germany, lately described in this series, that it would be superfluous to enter on a very minute recapitulation. This is not to be regarded as an indication of the existence of any strong sympathy with Germany. The reverse is the fact. Nowhere is Prince Bismark so heartily hated as in those Northern lands. In Denmark, especially, the popular feeling is so bitter against the Germans, that, as far as possible, they eliminate from their language the prefixes and other Germanisms which through intercourse had stolen in.

Of course the respective Governments limit the number of pharmacies, and those in existence are consequently of considerable value. In the three countries there are not 400 chemists' shops. London alone contains three times as many. To take Norway as an example. In Christiania, with a population of a little over 60,000, there are seven. In Bergen, which contains nearly 30,000 inhabitants, there are three. Trondhjem contains two or three "apotheks," and this in Norway, completes the list of towns which have the very barest chance of forming a "Chemists' and Druggists' Association." In Denmark and Sweden, which are more thickly, or rather less thinly, inhabited than Norway, there are more chemists, but not so many in proportion to the population. In Copenhagen, for instance, there are 175,000 people and thirteen chemists.

The Norwegians are the most ceremoniously and genuinely polite people in Europe. If you enter one of their shops, be it only for an ounce of tobacco or a box of matches, you are expected to take off your hat just as you would if you went into your friends' drawing-room. This remnant of barbarism is not so common in Denmark, and, indeed, as civilisation advances, the act of taking off the hat at all seems to die out. The most precocious members of the young England school have invented the habit of bringing their forefingers in a line perpendicular with the brim of their hats, and they call that making a bow! In Norway they are not rich, but they never take such everlasting pains to economise their hat-brims, and at the same time to sacrifice the outward appearance of courtesy.

All the chemists' shops are distinguished by a sign. The name of the proprietor seldom or never appears. "Svane-Apotheket," "Elephant-Apotheket," "Löve-Apotheke" (the swan, the elephant, and the lion), are the favourite signs, and invariably a well-executed representation of the distinguishing animal surmounts the entrance. There is no display in the windows, unless it be a chemical balance or some other apparatus of a scientific character. The shops are always large, excellently fitted, and almost invariably two steps up from the pavement. While you are waiting for your medicine to be prepared there is no perfumery spread before you to tempt your cultivated nostrils, no patent medicine, with labels of luxuriant eloquence, to indulge your well-trained mind. Medicine only; nothing but medicine. It is all very professional-looking, but none the less very grim and gloomy. A gallow would be none the worse for a little ornamental carving. In the larger establishments there are several dispensing counters, and the assistants are all busily employed. The doctors of

course do no dispensing, except in the remote country districts, where no apothecary is near. There are many little settlements in Norway with neither doctor nor apothecary within a hundred miles, and yet the people manage to live and die at about the average rate, without the aid of either.

Each *apothek* has a laboratory in connection, and in most cases there is a steam engine. Most of them have a little office also for the principal, where are kept the apparatus and reagents necessary for testing the purity of drugs. Once or twice a year the travelling physician calls to examine the stock and arrangements, and to see that the legal requirements are observed.

The educational advantages and requirements in Norway, Sweden, and Denmark are much higher than the English standard. We translate an extract from the Act of Parliament, which defines the pharmaceutical examination required from the candidates for apothecaryship in Norway. The remainder of the Act, not presented here, consists of matters of detail. It commences boldly:—

"We, Carl, by the grace of God, King of Norway and Sweden, of the Goths and Vandals:

"Proclaim: That in pursuance of the law of 2nd of June, 1836, we hereby prescribe the following Regulations for the Pharmaceutical Examination to be hereafter observed in the place of the Regulations provided by our most gracious decree of the 19th of December, 1837.

"Section 1 provides that the Examination Commission shall annually appoint a Secretary (Formand) to manage the books, correspondence, and accounts.

"Section 2 provides that a proposal to submit to the Pharmaceutical Examination must be sent in to the Secretary in the middle of May or November. The Secretary is to see that it is in legal form, that is, that it is accompanied with a short account of the candidate's course of life, testimony of his confirmation,\* apprenticeship, letter from the apothecary with whom he has served his apprenticeship, and a testimony from the visiting physician or from the district doctor that he has been examined and is considered competent to be an assistant in a chemist's shop (Apothek.)

"Section 3. At the Pharmaceutical Examination he shall be questioned in the following:

"1. Natural History. A systematically arranged acquaintance with the science as far as regards such of the natural bodies as concern pharmacy, namely,—

"(a) Zoology. A sufficient acquaintance with the classification of animals and an exact knowledge of such as are used in pharmacy, or which yield parts so employed.

"(b.) Botany. A similar acquaintance with the classification of plants, and an exact knowledge of those used in pharmacy.

"(c.) Mineralogy. A similar acquaintance with the classification of minerals, together with an exact knowledge of those which are officinal.

"2. Physics. A general acquaintance, together with an exact knowledge of those parts of the science which are of importance in chemical study.

"3. Chemistry. A general acquaintance, combined with a well-grounded knowledge of those parts of the science which stand in close relationship with pharmacy.

"4. Pharmacognosy. To recognise and exactly determine and describe the medicines which are met with in nature or commerce, and to give their composition. Also to know the maximum doses of poisonous substances used in medicine.

"5. The Reading of Prescriptions. Readiness to read and to translate into Norsk, and explain formulæ written in Latin according to homo or foreign pharmacopœias, and to render prescriptions into Latin with and without the usual abbreviations and signs.

"6. Special Pharmacy. An exact acquaintance with the modes of collecting, preserving, and preparing medicines ready for dispensing, with an explanation of the changes which occur during these operations.

"7. Materia Medica (Pharmaceutisk Handels-og Vare-Kundskab). A knowledge of the places from whence

\* Testimony of confirmation in Norway, as in most countries where the Lutheran religion prevails, comprehends also testimonies of baptism and vaccination.



medicines come, and especially of the way in which they are brought into commerce, and the means of detecting their purity or otherwise, together with a knowledge of the monies, weights and measures of the most important countries, and a general acquaintance with the methods of exchange and book-keeping, and the laws affecting chemists.

"8. Taxation of Prescriptions. Knowledge of the principles upon which the charges for medicines are governed in Norway, and quickness in pricing prescriptions.

"9. Practical Analysis. This is chiefly confined to qualitative chemical analysis of the composition of drugs, the actual conduct of such operations, and a written explanation of the various processes and the reasonings on which they are based."

The pharmaceutical student who has accomplished all that is required of him at these examinations is now called a "provisor," and may take the management of any business where he can obtain the appointment. But he must wait for Government sanction before he may open a business, and this sanction is very jealously guarded, or he must await some vacancy, and then only by special influence can he obtain the favourable support of the Government in his application for the business at disposal. The best businesses, that is, those established before 1845, are not entirely at the mercy of the Government. The proprietors have the right to sell or otherwise transfer them to qualified persons, but the Government may veto the transaction.

As we have intimated, most of the businesses are of a very pure dispensing character. Of course, in the remote country districts, this is slightly infringed, but not to any great extent, and where a general trade is transacted, as it is rather considerably in Denmark, the general business is usually carried on in a shop distinct from the "apothek." Surgical instruments are never sold by chemists. It is a trade of itself, and verges towards saddlery and harness-making rather than towards medicine. A few French patent medicines are in demand, but English and American are but little known. Morrison's pills and Brown's chlorodyne are perhaps the chief exceptions. All the chemists keep homœopathic medicines, and they generally keep them very carefully. There seems to be a fair demand for these, though homœopathic physicians are certainly not abundant. An English feeding-bottle may occasionally be seen as a curiosity in an ironmonger's window, but as a rule hardy Norsemen are raised without the aid of such as this.

Very strict regulations are prescribed with regard to the custody and dispensing of poisons and poisonous drugs. A few of the most deadly are to be locked up and labelled in red letters with a poison label attached. The key should be kept only by the principal or chief assistant, who is to witness the dispensing of the poison. A long list, and a rather heterogeneous one, is also added of medicines which it is only demanded shall be labelled in red letters. This list comprises varieties of danger from Aloes and Scammony and Pil. Colocynth Co., up to Opium, Aconite, and Belladonna, and the preparation of these. A table of maximum doses of strong medicines is also published, and if the physician wishes to exceed this, he is to write down the quantity in letters, besides giving it in figures on the prescription.

In each country a tariff is published, whereby the apothecary is compelled to abide. The tariff of Denmark and Sweden is very similar; that of Norway is somewhat higher.

In the taxation of prescriptions certain prices are allowed for the various manipulations and processes, as for instance, decoction, dividing into powders, making pills, etc. But the medicinal ingredients are charged exactly according to tariff, and the price is marked on the prescription. The following are a few specimens of prescriptions actually dispensed, with the prices attached:—

R Sol. Bicarb. Natrici, 3ss.—3xij.

Ess. Aromat., 5j.

Ess. Aurantii, 5j.

21/ Acetat. Morphi, gr. iss.

M. En Spiseke 4 G(ange) daglig.

(One tablespoonful four times daily.)

R Lichen Carragheen.  
Radicis Senegæ, 5ā 3ij.

Coque in

Aquæ Simpl., 3xiv.

19/ Ad remanent. Colat., 3vij.

Add. Aq. Amygdal. Amar., 3ij.

Syrup. Papaveris, 3ss.

M. En Spiseske hver 2dern time.

(One tablespoonful every second hour.)

R Chlorat. Hydrargyri Corrosiv., 50 cgm.

10/ S. in

Aquæ destill. 120 gm.

D. S. Til advortes Brug morgen og aften.

(For external use morning and evening.)

The figures in the margin are skillings, worth rather less than an English halfpenny each.

In the word "time," which occurs in some of the foregoing prescriptions, and which is the Danish for "hour," we have a singular instance of the etymological fluctuations to which words are subject, in changing from one language to another.

The Danish language is a very interesting one for Englishmen to study, as it illustrates the origin of a large proportion of our common words. It is the language of the three countries, though there are distinctions in each, Swedish especially varying from the rest. Old Norsk, too, though but very little known now, is said to be peculiarly interesting to students of the origin of the English language. But to glance casually at a few of the popular names for articles of the *Materia Medica* will be sufficient to illustrate our meaning. There is, for instance, "kvikeölv," which is bad spelling for quiksilver. "Jern" is iron. "Lakrits-rod" might be guessed at by any English pharmacist to mean liquorice root, and he would be right. Lard is represented by "fedt," from whence probably our word fat originates; and more singularly, the pig himself is known as a "griis" (pronounced greece). Dandelion is called "løvetand" (lion's-tooth); and coltsfoot, also, is "hestehov," which, literally rendered, would be horse's-hoof. Cocoa-butter brings us before a very remarkable instance again, the Danish word for butter being "smør," pronounced very nearly like our word smear, which is evidently a direct descendant. Wax is "vox," and honey is "honning." Chalk is "kridt," which is as mad a specimen of dog Latin as one could wish to find. "Trækul" would mislead the unwary pharmacist, for it has nothing to do with molasses, but represents charcoal. Literally it is "treecol." Prussic acid has the far too innocent title of "Blaasyre," which simply means blue acid. Names of colours are very similar in many cases in the Danish language and in ours. "Blaa" (pronounced blaw), "Grøn," "rød," and "hvidt" being instances. With regard to the peculiar spelling of the latter, it may be remarked that it is a question not to be decided quite at off-hand, whether in speaking we really sound the aspirate before or after the initial consonant. Whether in this word *white*, for instance, or in *when*, *which*, *what*, and the like, it is phonetically correct to place the h after the w, or, as is universally the case in the Danish, before it. Black is "sort," or "mørk," both of which have representatives in English in swarthy and murky. We might carry on this sort of dissertation to a great extent, but it is too evident that it leads us out of our proper track, to which we must return.

In this sketch we have not been able to do justice to Sweden in consequence of our very limited acquaintance with that land. But we know that the home of Linnæus and Berzelius is wealthy still in scientific pharmacists. In Denmark Mr. Benzon, the proprietor of the Svane-Apothek, in Copenhagen, is the acknowledged leader of pharmacy. His establishment dates back to 1536, and is we believe the oldest in Europe, with one exception, which, if we remember rightly, is at Leipzig. His business is perhaps the largest in the Scandinavian kingdoms, and he has besides large chemical manufactories a little way out of the city. Underneath the "Apothek" or chemist's shop proper, in this case, as in many other instances in Denmark, is another shop, called "Material-Handel," which is a sort of oil and colour and general druggist's shop. The customer goes up steps to the "Apothek," and down steps to the "Material-Handel."



In Christiania Mr. Möller's business, the Svane-Apothek also, is one of the best. It formerly belonged to Mr. P. Möller, well known as the introducer of Norwegian Cod-Liver Oil; but this latter business in the Löffodenlands and in England has absorbed all his attention, so with the consent of the Government he has transferred the "Svane-Apothek" to a nephew. As one of the heroes of Scandinavian pharmacy, we are also constrained to mention Mr. Schultz of Hammerfest, who dispenses medicine nearer to the North Pole than any other pharmacist. Early closing must be a difficult subject up there, where for two months in the summer the sun never gets below the horizon, while for two months in the winter he scarcely gets above it. An assistant desirous of "time for study" might try Hammerfest.

## Medical Cleanings.

"IN a multitude of counsellors there is safety," is a proverb which has lived some thousands of years, and has doubtless been proved to be true in thousands of instances, but the recent action of the governors of Edinburgh University is scarcely to be reckoned as one of these. A boy at five shillings a week could have managed matters far better than the Council, the Senatus Academicus, and the Medical Faculty have done. Of course this refers to their conduct towards the lady students, which has of late obtained a public notoriety more satisfactory to the defeated than to the victorious party. The story may be told in a few words, so as to define the position in which the ladies now find themselves. Exactly two years ago, in compliance with a request made by Miss Jex-Blake, the University Court, in pursuance of resolutions arrived at by the Senatus Academicus, the General Council, and the Medical Faculty, issued certain regulations to provide for the medical education of women. The regulations were published in the University calendar in exactly the same way as the regulations which governed male students. In consequence of this, Miss Blake and five other ladies passed their matriculation examination, and commenced their studies forthwith. The public applauded this action of the Edinburgh University as the inauguration of a liberal policy, and of a social movement calculated to confer many advantages both on the women who should study and on their future patients. It is quite unnecessary that we should do more than mention the disgraceful insults to which in the course of their studies these ladies were subjected from riotous students, not altogether discouraged by some who were not students. At the commencement of this session, three of the ladies were desirous to be admitted to their first professional examination. They made proper application, and paid their fees. Shortly afterwards they were astonished to receive a notice from Professor Balfour's clerk, addressed to Miss Blake, worded thus:—"I am desired by the Dean of the Medical Faculty to inform you that he has been interdicted by the Faculty from giving examination papers to ladies on the 17th and 18th current."

The defence of this course was that though the University had made certain regulations as to the medical education of women, it had never promised or provided for their examination. This defence was neatly exploded by Dr. Alexander Wood when the subject came before the half-yearly meeting of the General Council. He said "he had no doubt he would be told—for they were told strange things in these discussions—that while the classes were opened there was not a word said about examination. Well, there was an ingenious instrument which he had sometimes seen, with a door at one end, which let an animal in, and a barrier at the other end, which prevented it from getting out, and as soon as the animal got in the door shut. That was called a trap; but he had yet to learn that dignified Professors in University Courts would think it a nice thing to set a trap even to catch a woman. Most certainly the trap was set, most certainly the trap was baited, most certainly innocent and simple women were betrayed to going in, and most certainly when they got in, and half-way through, they found the door shut in front of them; and the excellent principal without authority of any kind, as far as he could make out,

shutting the door behind them also. This was the position of matters, and he asked seriously, was it a dignified and right position for the University to occupy?"

Armed with the opinion of the Lord Advocate and of another counsel, however, Miss Blake made application to the Senatus Academicus, who, finding they held an untenable position, resolved that no further difficulties were to be placed in the way of the ladies with regard to this examination. The three ladies who entered for it all passed. But now came a new difficulty. Up to this point the candidates might qualify themselves by attending certain accepted courses outside the University—extra-mural courses as they are termed. But in the second part of the curriculum these are not admitted, and therefore an application was made that in those subjects where mixed classes were not desirable, assistant-professors might be appointed to give the necessary instruction, the ladies to bear the special expense. This came before the General Council on October 27th, in the form of a motion of Dr. Alexander Wood's, to the effect that the University was "bound in honour and justice to render it possible for those women, who had already commenced their studies, to complete them." In the course of a most logical and eloquent speech, Dr. Wood read a petition in favour of female medical education, signed by 9,127 females of Scotland. Mr. Alexander Nicholson seconded the motion in a speech also marked by much ability. An amendment was moved by Professor Turner, with the object of preventing any interference on the part of the Council with the present condition of affairs. This was seconded by Professor Wyville Thomson, and supported by Professor Christison who, more ingeniously than ingenuously, combatted the broad question of justice which Dr. Wood had raised. Professor Calderwood, who has always been an able champion on the liberal side of this question, made a short but spirited speech, and Dr. Wood concluded the debate. The division resulted in 97 votes for Dr. Wood's motion, and 107 for Professor Turner's amendment. We may hope that this is the defence of the last ditch. The check to the assailants can be but temporary; but until the University Council of Edinburgh University sees fit to retrace its recent action, it stands branded with the disgrace of having virtually broken a contract. The public can afford to wait a little longer, but it is certain that in spite of the jealous opposition of medical men, it will heartily welcome and support medical women who are willing to fit themselves for an occupation for which in some of its branches they are eminently suited.

*Apocryphal* of this we may mention that two of the Edinburgh lady students have been defeated in a more effectual manner than in the encounter with the University Council. One is now on her wedding tour, and another is shortly to be married to a prominent literary man in the city.

Miss Jex-Blake was lately presented with a cheque for the sum of £1,030 12s., the amount of the fund subscribed to defray the costs of the action brought against her by the student Craig. The presentation took place at a public meeting in the Council Chambers, Edinburgh, the Lord Provost in the chair. The honorary treasurer, Miss Louisa Stevenson, stated that, after all expenses had been paid off, a surplus of £112 19s. remained. As the subscription list had been closed in August, she had been obliged to return a large number of sums sent to her since. In thanking the subscribers, Miss Jex-Blake, in the course of her remarks, and after referring in some detail to the action brought against her, said, "I hear that some of our opponents have been boasting that they have heard the last of the lady students; that our cause is now hopelessly lost. I am no prophet; but I think I might venture with some confidence to predict that never has our cause been so nearly won; that almost certainly before twelve months have passed over our heads, we shall, thanks to this same British love of fair play, this constant sympathy which never fails the weaker side when its cause is a just one, have obtained even in this very university everything that we need and desire." The surplus sum which had been handed to her Miss Jex-Blake proposed to add to the fund for the purpose of founding a future hospital for women in Edinburgh.

A correspondent of the *Lancet* calls attention to the way in which consulting physicians and surgeons are made to suffer from alterations in the currency. *Tempora mutantur*, and coins change with them. The noble guinea current



when George III. was king has passed away, and has given place to a parvenu of brazen aspect, which is dropped blandly into the palm of the consultee, often unaccompanied by its pale-faced complement; and this, notwithstanding that the value of the service for which the guinea was exchanged has increased owing to the advances made in medical science.

M. Nélaton, the eminent French surgeon, is expected in England shortly. It is said that he will permanently settle in London.

The *Philadelphia Medical Times* gives the following as interesting to many readers. Half of all who live die before seventeen. Only one person in ten thousand lives to be one hundred years old, and but one in a hundred reaches sixty. The married live longer than the single; and out of every thousand born only ninety-five weddings take place. Of a thousand persons who have reached seventy, there are of clergymen, orators, and public speakers, forty-three; farmers, forty; workmen, thirty-three; soldiers, thirty-two; lawyers, twenty-nine; professors, twenty-seven; doctors, twenty-four. Farmers and workmen do not arrive at good old age as often as clergymen and others who perform no manual labour; but this is owing to the neglect of the laws of health, inattention to proper habits of life in eating, drinking, sleeping, dress, and the proper care of themselves after the work of the day is done. These farmers or workmen eat a heavy supper on a summer's day, and sit around the doors in their shirt sleeves, and, in their tired condition and weakened circulation, are easily chilled, laying the foundation for diarrhoea, bilious colic, pneumonia, or consumption.

Sir William Jenner has addressed a letter to the medical journals respecting her Majesty's recent illness. He says, "A statement has been widely circulated to the effect that the Queen's recent illness was the result of revaccination. Permit me to give the most unqualified contradiction to the report. There is not a shadow of foundation for it in facts. Her Majesty's recent illness did not commence till many months after the revaccination. There was no connection, direct or indirect, between the two." Now Sir William Jenner is a very good authority no doubt, and we see no reason to question his judgment in this matter. But surely in writing on the primary cause of anyone's illness, a subject shrouded in mystery even to the wisest physician, the royal doctor might have adopted a more modest tone. How can he tell with such absolute certainty that there was no connection, direct or indirect, between the revaccination and the recent illness. His *gratis dictum* carries far more weight doubtless, but it only differs in degree from the *dictum de dicto* which it so strongly condemns.

## PHARMACEUTICAL SOCIETY.

EVENING MEETING, NOVEMBER 1ST, 1871.

THE first meeting of this winter, at Bloomsbury-square, for the discussion of pharmaceutical subjects, was a great contrast to the evening meetings of recent preceding sessions. In respect both of the papers read, the comments on them, and the attendance, it was worthy of the Pharmaceutical Society of Great Britain, which has not been the case on many former evenings. The President (Mr. A. F. Haselden) occupied the chair. Mr. J. B. BARNES first read a useful practical paper on

### A NEW EXCIPIENT FOR PILLS.

The new excipient suggested was soluble cream of tartar (a solution of bitartrate of potash, in bicarbonate of soda, boracic acid, or borate of soda and tartaric acid). This is used in solution evaporated to the consistence of mucilage. Mr. Barnes showed some specimens of pills prepared with this excipient, all of which were perfectly round and very hard. The first were sulphur pills, containing in each, four grains of sublimed or precipitated sulphur, one-twelfth of a grain of tragacanth, and sufficient excipient. In tepid water the soluble cream of tartar dissolves in a few minutes, and the sulphur is set free. Pills of chloral hydrate were also shown made according to the following formula:—

Hydrate of Chloral sixty grains,  
Soluble Cream of Tartar  
(of the consistence of mucilage), } two drops,  
Gum Tragacanth, three grains,

mix and divide into twelve pills. These should be kept in lycopodium, and should not be made too long before they are to be taken, as small particles of the drug have been perceived on the surface. The other specimens shown were pills of Dover's powder, nitrate of potash, chlorate of potash, citrate of potash, and gallic acid. The Dover's powder pills were made without tragacanth; the rest required a small proportion. Mr. Barnes had also prepared pills containing four grains of chloride of ammonium, also some camphor and quinine pills, with this excipient and a little tragacanth. These should all be kept in well-closed bottles. The chairman (Mr. Haselden) remarked on the excellent appearance of these pills; but said that in the case of chloral hydrate he thought pharmacists should as far as possible discourage the dispensing of such a medicine in that form. As one of the old school, he objected to pills when he could give the medicine in the shape of draughts. Dr. Attfield asked how long was required for the pills to dissolve, to which Mr. Barnes replied that he had found in tepid water they required perhaps ten minutes, on the average. Mr. Linford suggested that the gradual solution of medicines which the pill form secured might possibly modify their effects.

The next paper was by Mr. JOHN ELLIOT HOWARD, F.L.S., on

### CINCHONA TREES GROWN IN INDIA.

In this paper Mr. Howard recorded his latest experiments on the Indian Cinchonas. Last summer he was furnished with two trees complete, roots, trunk, branches, and leaves, not living, but packed in cases, from the Government Gardens, Ootacamund. They were nearly five years old when cut down. One was *Cinchona succirubra* and the other *Cinchona officinalis*. The gross weight of the first was 28 pounds 12 ounces, of the second 10 pounds 1 ounce; showing that the *C. succirubra* will develop almost three times as fast as the *C. officinalis*, a circumstance accounted for by the abundance of its leafy branches, whilst the general aspect of the Loja-tree, a stem bearing a tuft of vegetation on the summit, has caused it to be compared to the aloe.

But this rapid development of the *succirubra* by no means necessarily implies a corresponding success in the cultivation of this species. If the quinine found in the bark of the *C. officinalis* prove to be three times the amount in the same time, and of purer quality than in the *C. succirubra*, and supposing the relative weight of the bark to be the same, the preferential price would be given for the one-third weight of *C. officinalis*. The average of a parcel of *C. succirubra* recently cut, and now coming home is, he was informed, under 1 per cent., but the average of the *C. officinalis* coming in the same parcel is over 3 per cent. of sulphate of quinine. Mr. Howard had not ascertained the relative weight of the barks of these specimens, but he stated that that on *C. officinalis* was the thickest. The trees very closely resembled in external aspect those of the same sorts grown in their native climates. This was especially the case with the *C. officinalis*, which seems in all respects to be the exact reproduction of the plant named by Pavon *C. Urutisinga*, but which has now been restored by Dr. Hooker to the old Linnean designation. Another general observation which presented itself on closer inspection, was the occurrence on the lower part of the trunk of each tree of a peculiar white fungus occupying the crevices of the bark, penetrating into the very wood itself, and occupying cracks and fissures in the same. This Mr. Howard considered a very bad indication; and, judging from the analogy of beech-trees similarly affected in plantations here, would regard it as an almost fatal sign. It may not generally occur in the Indian plantations, but its accidental existence in these trees may, in part have led to their selection for the purpose of eradication. A portion of bark of the under part of the stem of a Calisaya tree grown in Java, and "infected by mycelium," was shown. This arose from the decaying portions of old



roots and trunks of the uprooted forest, in place of which cinchona-trees were expected to flourish. The same or a different cause may have led to the existence of this fungus on the trees at Ootacamund. Mr. M'Ivor explained the evil as arising from the earth being heaped up for some inches around the base of the trunk, in which case it may have had a simply local origin. All the cinchonæ are impatient of water at the roots, and if the water lodges in the least in the subsoil, although it may be a place where there is an excellent fall and surface drainage, there is a bald patch in the plantation. Mr. Howard's chemical examination of the bark proved in the first place that an anticipation of Mr. Broughton's was not verified. The Government quinologist expressed a doubt whether the quality of the bark would not be damaged by allowing it to dry on the tree, since he had found that if a tree dies from any cause its bark loses its alkaloids in a few weeks. Possibly in this case the sudden death of the tree prevented any abnormal circulation. The bark (of *C. Succirubra*) yielded 3.54 per cent. of alkaloids, of which only 0.82 proved to be quinine, the rest cinchonidine and cinchonine—the former pure and good; the latter, on the contrary, losing much weight in refining. The bark, in fact, resembled that taken from similar trees in the ordinary method. The bark of the roots is so thin, and adheres with so much pertinacity to the wood, that it would seem lost labour to attempt its separation in any quantity in the dry state, whatever may be the case when the roots are freshly removed from the earth. The examination of the heart-wood yielded to the author results analogous to that from South American trees, with this exception, that he found less cinchotannic acid than in the wood from South America, and also a small portion of chlorophyll. In the course of some further remarks Mr. Howard said he hoped the examination of the leaves of these plants might afford some topics of interest. He showed a botanical specimen of the valuable variety of *C. officinalis*, known as the *lanceolate*. Mr. Broughton and Mr. Howard had both found an unusually large percentage of alkaloids from this bark, not less than 11.40 percent., and 9.75 of quinine. The Pitayo species and the variety of *C. officinalis*, known as *Amarilla del rey*, were also very valuable, and should be cultivated, but the last-named it was now impossible to procure. By devoting attention to such points, by encouraging the best species, and by high cultivation, the undertaking of Indian acclimatization will become one of pecuniary profit. All things seem to promise an abundant return to the careful cultivator, and the pecuniary result is beginning to be realized, from shipments sent home to Europe. There can be no doubt that, on the whole, this great experiment is a success.

Mr. HASELDEN asked why the Government should have encouraged the growth of the *succirubra* barks in preference to the *Calisaya* barks, seeing that the latter produced a larger amount of quinine—so much used in this country—than the other.

Professor BENTLEY asked whether the results obtained were founded upon examination of one or two plants, or were arrived at by the examination of a number of plants; because everyone who knew anything about the development of plants would agree that two plants selected promiscuously would not yield any special result which could in any way be depended upon. There was another question in which he felt interested. Some years ago Mr. Howard had shown that the root-bark of *C. Calisaya* was very much inferior in every respect to the stem-bark. But certain other investigators came to a different conclusion. If he rightly understood Mr. Howard's paper that evening, no special examination was made of the root-bark, because it was too thin. If, however, he had made any such examination, it would be very interesting to know the comparative value of the root-bark and the stem-bark, not only as bearing upon the particular views which Mr. Howard had always held, but as bearing on those different alkaloids or different parts of the bark which were of great importance to all who took an interest in physiological botany.

Mr. HOWARD remarked that, in reference to the different species of Cinchona, he had always urged upon the Government the securing, in the first place, of all the species they could get from South America, and giving them all a fair trial under different circumstances. One species would

develop much more rapidly in bog earth perhaps, while another would develop in loam. *Succirubra* would develop well in loam. Of course the climate had great influence on these trees, which were peculiarly susceptible of influence from light and climate in various ways. His object had, therefore, been that the Government should not confine their attention to *Succirubra*, but that they should devote it to other species in proportion as they were found to be valuable. The object of his paper was, partly, to enforce that view of the subject; and he showed that the *Succirubra*, though so rapid in its development, was not so good as the other. He had not had an opportunity of examining the *Calisaya* upon so large a scale, but it was a better tree, although very delicate in its predilections; and he scarcely knew what to say about the success of that species. He had seen specimens from Darjeeling, which looked exceedingly good, although they did not bear out the full idea he had formed from the appearance. He did not know why. With reference to Professor Bentley's question, he remarked that he had not had any very great experience in the barking of the roots; and therefore what he had said about root barks must be taken as founded on a limited experience. When the roots run under moss, he had no doubt the bark on them would be very rich; but it was very different otherwise, for when the roots penetrated deeply into the ground it was thin and worthless. Mr. M'Ivor succeeded in getting the greatest products from roots covered with moss, and he (Mr. Howard) had no doubt Dr. De Vrij was right in that respect, and to him he readily yielded the palm.

After Mr. Howard's paper, at the request of the PRESIDENT, Mr. BRADY made a few remarks on pharmacy in America, but having prepared nothing on the subject, he did not enter into any details. Following this Mr. GREENISH read an elaborate paper on

#### PHARMACY IN NORTH GERMANY AND AUSTRIA,

being a narration of observations gathered during a month's tour in those empires. There have been lately published in the CHEMIST AND DRUGGIST exhaustive articles on these subjects from the pen of an accomplished German pharmacist. The chief parts of Mr. Greenish's paper are therefore in the knowledge of our readers. In commenting on the Government limitation of pharmacies in Germany, Mr. Greenish arrived at similar conclusions to those which we ourselves expressed but recently on the same subject. He "could not avoid the conclusion that pharmacy there is now suffering from over-legislation, that the limitation of establishments and Government protection is not conducive to its best interests, and that it has at the present time looming before it the most serious questions—questions which press for solution, and must one day be grappled with and solved; and he believed that it is not at the present time in a satisfactory and progressive condition."



#### BARNETT'S REGISTERED TAP FOR SULPHURIC ACID.

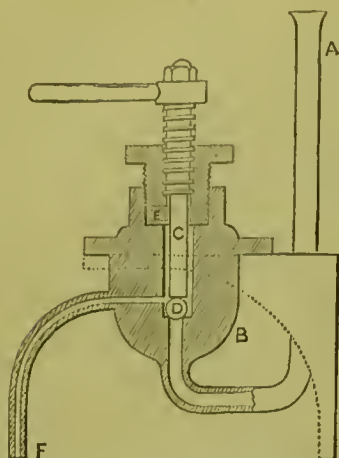
THE illustrations of Barnett's Registered Tap for use with sulphuric acid which accompany this notice will enable us to explain clearly the principle of a mechanical contrivance, which will be of great service to all who use oil of vitriol frequently, among whom, of course, all soda-water makers are included.

The drawing No. 2 shows the tap as it is sent out by the maker; and it will be seen that a bracket is attached to it whereby it can be fixed in any convenient position. No. 1 is the same in section. The tall stem A is a lead pipe, which is to be connected with another from the vitriol cistern. The sulphuric acid passes through this tube, but its passage



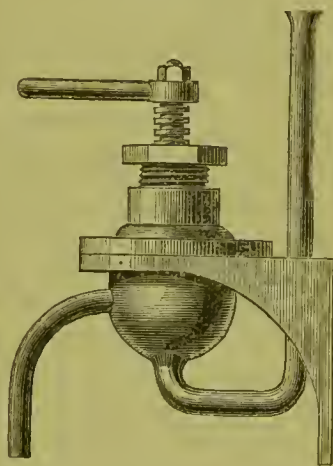
is stopped by the glass ball D, which is kept in its place by the screw C. On loosening that screw, by turning the handle, the pressure of the acid of course forces up the

FIG. 1.



glass ball, and the liquid passes through the outlet F, but its passage is perfectly controlled by the screw. B is a lead body, and E is some felt packing. It will be seen that the acid comes in contact only with lead, glass, and silver,

FIG. 2.



therefore the tap is perfectly impervious to its action. The inventor makes a just claim for its usefulness on the score of safety and cleanliness, and for the exactness with which the quantity required can be regulated. Taps have sometimes been used for the same purpose composed entirely of glass or earthenware, made in the form of an ordinary plug cock. The objection to this form for sulphuric acid is this: the taper plug going through the barrel of the cock has a very large surface. This in all cases is ground in, and lubricated with tallow, and, for a time (while the grease lasts on) may answer, but directly this is gone, the whole affair is useless, as sulphuric acid has a great binding or grinding tendency, or, as it may be called, is an anti-lubricant, and thus, the plug in the cock, if tight enough to prevent leakage, cannot be turned, and if easy enough to turn is sure to be leaking. The Registered Tap is made by Mr. S. Barnett, aerated water machinist, of Forston-street, Hoxton, and costs two guineas.

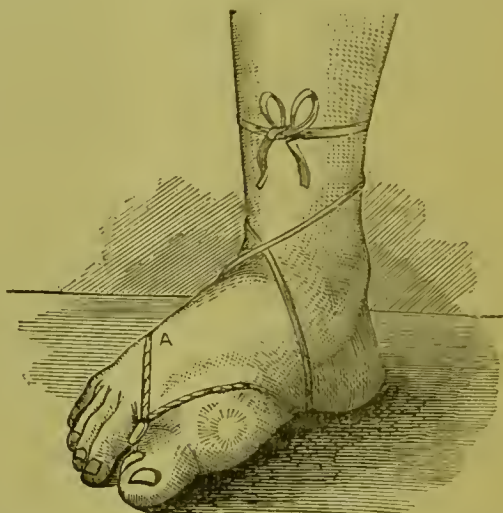
#### ALCOHOLOMETERS, ETC., IN VULCANITE.

MESSRS. LOUIS BLAISE AND Co, of St. James's-street, at the suggestion of Mr. Pellock, the eminent surgeon, of St. George's Hospital, have commenced to make urinometers, alcoholometers, saccharometers, hydrometers, and other

instruments used to ascertain the specific gravity of various liquids, of vulcanite instead of glass. No one can compare the two instruments without seeing that the vulcanite is a better material for the purpose than the glass. It is not liable to break, it is as little affected by the liquor, and it is found in practice that the specific gravity can be more promptly ascertained by the former than by the latter. One other slight advantage is, that being graduated with white figures on a black surface, it is very easily read with accuracy.

#### NEW BUNION SPRING.

THE engraving shows the application of a little invention by Mr. Miller, the surgical instrument maker, of Leicester-square, which is calculated to yield considerable relief to sufferers from bunions. To understand it it is necessary that the nature of a bunion should be correctly understood,



a branch of science respecting which some misapprehension occasionally exists, even amongst the proprietors of those and similar ornaments to the feet. A bunion is not an enlarged corn. It differs from it entirely. The great toe turning inwards draws open the joint; the oil escapes, and gradually forms a hard mass; inflammation ensues, and hence the pain. The old form of bunion spring was a steel circle surrounding the bunion, to which was attached an apparatus for drawing the toe into its proper place by means of lacing. Mr. Miller's new spring accomplishes the same object in a much simpler manner. Two little pads apply the pressure between the toes, pushing the toe out instead of pulling it by a lever whose fulcrum is on the tender joint. The spring can be readily adapted to any foot, and it is kept in its place by ribbons fastened like a sandal. The advantage and simplicity of the new spring will be very evident.

#### DRAPER'S DICHROIC INK.

ALTHOUGH this article has been in the market for some two or three years, it is only recently that we have ourselves commenced its use. A few weeks' experience of the pleasure of writing with it induces us to recommend it very strongly to those of our readers who are still unacquainted with it, both for their own use and for sale. It is not impossible to get a good jet black ink, but many of these it is very difficult to dry; with Draper's ink there is no difficulty of this kind. It can be dried instantly, leaving a handsome black, and no resulting smear.



## THE WINTER CREAM.

MESSRS. MOTTERSHEAD and Co., of Manchester, meet the coming winter with an excellent preparation of honey, glycerine, spermaceti, etc., which they call "The Winter Cream." For use on the hands, or for gentlemen to apply to the skin before shaving, we have no doubt this cream will prove beneficial. It has some advantages over cold cream, and is the pleasantest application of glycerine for the purpose that we have seen. A few jars will be attractive on any chemist's counter, as each is ornamented with a pretty chromo representing a wintry scene.

## THE PHARMACY OF TO DAY.

*Being the Inaugural Address of the New Session of the Glasgow Chemists' and Druggists' Association, delivered by MR. E. C. C. STANFORD, F.C.S., October 18th :—*

GENTLEMEN,—I would have much preferred that some one should have occupied this position on the present occasion more conversant than myself with the numerous details of your most detailed of all professions; one who could have spoken with authority on those numerous vexed questions which are now becoming so interesting to all of you. You will not, however, expect me to enlarge upon these; I could add nothing to your information on such topics; and, moreover, I would select higher ground for our occupation this evening. It is always a relief to turn from those petty annoyances which are inseparable from every man's daily life, to a larger field, where there is light and recreation. We are all allowed to soar aloft into the calm serenity of philosophic truth, where the little vapours of human disputes never rise and cannot penetrate. It is interesting even to observe from these thoughtful eminences the money-grubbers of the earth, and note their infinitesimal size and true value. Without, however, touching on vexed questions, I feel bound to say a few words about the Pharmaceutical Society. Through good repute and evil repute, mostly the latter, the leaders of this Society have fought an uphill fight for many years against the ignorance and prejudice of this country. You cannot be sufficiently grateful to these disinterested men that they have at last won the position. I say disinterested, because few of the founders of the Pharmaceutical Society could ever expect to reap the benefit of their labours in their own lifetime; they worked for the public good, and they worked for posterity. And let us not forget that the ignorance they fought against was largely developed in their own ranks. If you compare the state of British pharmacy when the Society was first founded with that of Continental pharmacy, and the status of the British pharmacist with that of the French pharmacien, you will see how much we had to be ashamed of, and how much we had to learn. The pharmacien, a man of university education, and of high scientific attainments; the pharmacist, a poor apprentice, who studied the "rudiments of chemistry" in the shape of pounding various drugs, and never cared to know from whence they were derived. The emblem of the one, the microscope and the balance; the emblem of the other, the pestle and mortar. The founders of this Society saw that it was no use to clamour for an equal position for their brethren until they were educated for that position. To have suddenly converted the status of the chemists and druggists of Great Britain to that of high-class pharmacists without education, would have been quite as sensible as to have made them all post-captains, and sent them to sea without teaching them navigation; though the former mistake might have been better for the British Navy.

The Council acted wisely, therefore, in at once setting to work as an educational body. They established a school of pharmacy, chemistry, botany and *Materia Medica*. Fowkes and Pereira, the most eminent men of the time, were the first lecturers, and their successors have fully maintained their reputation. There is no school in London where the

teaching of these special sciences is so sound and so good. No greater proof of its success can be desired than the comparatively large number of young men who have passed the curriculum, whose names are already well known in pharmacy. So far from being the last in the race, there is every probability that the present race of pharmacists will not be excelled, and may even be unequalled in any other nation. Now, however, that the Pharmaceutical Society is an examining body, and the only one under Government by which all future pharmacists will have to be examined, their position has certainly become anomalous, and they must sooner or later sever this connection. They will have to renounce the right of educating and then examining; the examination must be restricted to their rules, but the education must be open and free. London, as the great heart of the United Kingdom, will always be the centre; and the eminent professors who have made the reputation of Bloomsbury-square will, I trust, long guide the helm of pharmaceutical education. But every large city must become another centre for the education of its own district. You are particularly well situated here, as almost any kind of scientific education can be cheaply obtained in this city. It is time to be up and stirring. I cannot congratulate you very heartily on your remarkable progress in pharmaceutical education so far; but you are earnest men; and if *festina lente* is your motto, it is a good one, if you do not allow the second word too much to disqualify the first. There is no doubt your action has been a good deal paralyzed by the very large number of surgeons who keep open shops here; in fact, I never saw any city so peculiarly situated in this respect. The public have a right to expect that all assistants in these shops should pass the examinations of the Pharmaceutical Society. The evil will not, in my opinion, be a lasting one, for I am convinced the public welfare demands a rigid separation of medicine, surgery and pharmacy, as in France, and to that it will come sooner or later.

Any man who wishes to become eminent in either of these branches of science (and all students ought to endeavour to be so) will find that he has the work of a long lifetime before him; and to suppose that pharmacy can be learnt, in its true sense, in the short course presented to medical students is perfectly absurd. The fact really is, that pharmacy, *materia medica*, and chemistry and botany in their relations to it, were almost unstudied sciences in this country, and there were no examinations worthy the name in either before those of the Pharmaceutical Society were established.

It will always be necessary that the apprentice of the future should have access to local schools, and that a certain portion of his time should be devoted exclusively to the study of the science of his profession. This will, of course, demand some concession on the part of the masters in shortening the hours of labour; but as we get older we are beginning to find out that it is not necessarily those who work the longest that do the most work. We are beginning to measure a man's life not by its length, but by the work he has done. In all directions, in every trade, business and profession, there is a growing tendency to shorten the hours of labour. It is a movement with which I heartily sympathize; because I believe it increases the health, and therefore increases the available work of our race. It is astonishing to me that men who feed and rest their horses when they want to get work out of them, and where they only want muscle and strength, will allow, and even expect, their poor human drudges to wear out their minds and bodies in continual work. This is a digression, but I mention it here as a sign of the times, and one which will surely act to shorten even your hours of labour. Higher remuneration, shorter hours, and raised social position for you all, must be the result of the arduous labours of the founders of the Pharmaceutical Society. I cannot leave this subject without congratulating you on the wonderful success of the Pharmaceutical Conference. With the Edinburgh meeting fresh in your recollection, I need scarcely remind you of the value of its meetings, nor of the extremely social and real science to be found among its members. The few who met the first year at Newcastle could scarcely have expected that by this time we should number nearly 2000 members, and publish a most valuable year-book.

Let us now take a rapid glance at some of the extraordinary advances that the last few years have seen in pharmacy. It is impossible to predict what may be the



results of a more extended knowledge of chemistry in its application to medicine. But we may confidently anticipate that remedies will be found to alleviate all human suffering; and that all sickness may become curable but that of old age, for, unlike the ancient alchemists, we except this ailment as beyond human power. What does not mankind owe to the discoverer of chloroform? Reckon up the sum total of lives saved and suffering alleviated, and tell me, if you can, the value of that discovery. Again, following the germ-theory of disease, how enormously has the use of carbolic acid as a germ-destructive increased the surgeon's power to save the limbs and the lives of his poor patients. What would medicine do now without morphia, quinine, strychnine and the other alkaloids, the extraction of every one of which, from their natural sources, has been an elaborate chemical study and a triumph in itself? Who can define the limits of such inquiries? We have every reason to expect that some, perhaps all of these complex bodies will some day be produced artificially in the laboratory. The masterly researches of Dr. Wright, on the substitution products of morphia and codeia, certainly point in this direction; while the preparation of artificial quinine has been as long looked forward to as was the "elixir of life" and the "philosopher's stone" in former times. It is remarkable that researches of this nature, if unsuccessful in attaining the object in view, are invariably fruitful in other discoveries. It was, I believe, in researches to test the possibility of making artificial quinine, that Mr. Perkin made his wonderful discovery of mauve—a discovery which has laid the foundations of a gigantic industry of such rapid growth that it has revolutionized in a few years the colours of the world. So the late Dr. Matthiessen, in his research on morphia, obtained apomorphis, another base differing from the former only by an atom of water, and yet having such totally opposite properties that it is the most rapid emetic known.

Recently, another substance of vegetable origin, alizarine, has yielded to the persevering attacks of chemists, and is now manufactured largely, and in many instances it supersedes, and in some respects is finer than, the natural colour. It is worthy of remark that this new colour, like those from aniline, is a product of coal-tar, being derived from anthracene, one of its constituents, discovered by Dr. Anderson. It is a remarkable fact, and worth reflecting on, that as we extract our light and heat from coal, the buried light and heat of the sun collected ages ago, so we are now enabled even to split up the buried rays into all their component colours, and print them indelibly on our fabrics. This is not a figure of speech, but an actual fact.

There is little doubt that indigo, another vegetable colour, will not long hold out against the determined synthesists, who will ere long succeed in piecing it together; indeed, the discovery is already announced. Think, also, of the numerous odours and flavours chemistry has given us—the subtle ethers, which render the flavours of our choicest fruits even more perfectly than they could be obtained from the fruits themselves. As one example only of an odour, take nitro-benzol, now so enormously used to give an almond flavour to a scented soap, at a cost within the reach of the poorest of our population.

The increasing use of bromide of potassium, another of chemistry's contributions, would have been impossible, were it not for the extraordinary discovery of an apparently evaporated sea-water bed in Germany. The amount of bromide consumed in medicine is now enormous, and most of it is derived from this source. The same mines have also completely changed our sources of potash; they produce far more than all the other sources of England and France put together, and have so reduced the price that carbonate of potash is now largely made in this country at a price which competes most favourably with American pearlsh, and will ultimately drive it out of the market. Bromide of potassium is an instance of a substance long used in medicine before its valuable properties were discovered.

One of the most remarkable chemical contributions to medicine is chloral hydrate: the rapid increase of the use of this substance is so extraordinary, that I know of one firm alone which disposes of 1,000 lbs. per week, and this is probably not half the consumption. It is certainly, after chloroform, the most curious selection from the laboratory of organic research, in its effects on the human system. I would

venture to remark here that I hope Germany will not always supply the most of such preparations as this and the vegetable alkaloids. At present, no doubt, they have a large advantage over us in the manufacture of these substances where much spirit is required, from the extravagant price of duty-paid spirit here. Methylated spirit cannot always be used, and, moreover, it introduces impurities. It has always appeared to me that our Government should have gone further, and allowed the use of pure spirit duty free for manufacturing purposes; the use of such would have secured the admission to the works of Excise officers, who could prevent any abuse of the privilege. It is admitted that methylated spirit can be made potable, and our local shebena and police-courts can testify to its value as an intoxicant. Indeed, if our whisky shops were restricted by law to the use of pure methylated spirit, we should cease to hear of the maddening effects produced in our streets by vile drinks of unknown composition. Pepsine and pancreatic deserve a passing notice—these curious fermentive principles are now largely used to assist nature in the process of digestion. That these principles are identical with those secreted in the human interior, there is little doubt, but that they really have the large effect in the presence of the living stomach that is claimed for them, is, I submit, open to doubt.

Perhaps the most important of all technical chemistry is the utilization of waste materials; and, fortunately, it has been of late years greatly progressive. The history of large chemical works is generally that each accumulates enormous stocks of some waste material, which at last becomes such a nuisance that the owners are compelled to adopt some means of working it up. The process invented for the purpose of ridding ourselves of a nuisance often turns out a source of profit; such, for instance, are the utilization of soda-waste by Mond's process, and the recovery of manganese from waste still liquor by Weldon's process. Deacon's new process for the preparation of chlorine from hydrochloric acid by dissociation, bids fair, however, to supersede the use of manganese altogether. The manufacture of soap, too, is likely to undergo a considerable change if Professor Morfit's method of combining the alkali as carbonate direct, with the fatty acid, and superheating to free the carbonic acid be generally adopted. The process is a very perfect one, and the soap can be made and finished in a few hours.

I wonder what Sir Humphry Davy would have said to anyone who talked about stellar chemistry. That great man, in ridiculing the idea of lighting London with gas, triumphantly asked the fanatics who proposed such a wild scheme, whether the dome of St. Paul's was to be the gasometer? Yet we cannot imagine Regent-street illuminated, or rather darkened, with dips again, and to us stellar chemistry has a real meaning. Who will venture to bound a science which reaches far away through space, and with unerring accuracy tells us the composition of distant worlds and distant suns? What can be more humiliating to our small intelligences than the reflection that a distant star will photograph its spectrum on a sensitive surface with the ray of light that left it when the oldest man in this room was a boy? What would the great father of British chemistry have said had he stood in the lecture-room of the Royal Institution, where his great discoveries were made, and seen the burning hydrogen extracted by your great countryman Graham, from a meteorite, the heat and light of another world? or could he look with Lockyer on the burning flames of hydrogen, which dart up from the sun a height of 50,000 miles; or could he read the flashing telegrams which run so rapidly round our world, that all our notions of time are completely upset, and we actually receive intelligence to-day which was sent to-morrow? Excuse the apparent absurdity, it only shows how powerless language is to keep up with human progress. Could he have lived with us and seen a large city dependent entirely for its communication with the outer world by a marvellous kind of photography, so minute that it enabled a pigeon to carry a proof-sheet of the *Times* under its wing.

Could Sir Humphry Davy now stand in our favoured position and see all these advances, he might, indeed, admit with Newton that he had simply played as a child on the seashore, while the great ocean of truth lay unexplored before him.

In technical pharmacy, what advantages are now given by



the use of steam and gas! Steam, gas and water enable us now to carry out preparing processes which were impossible before their introduction.

Coffey's curious application of high temperatures in stoneware by convection or circulation of highly-heated paraffin oil well deserves attention; it may be found specially useful in evaporating some of those corrosive liquids which can only be heated in stoneware vessels, the heating of which is always difficult.

I am glad to notice some recent improvements in tincture presses; no apparatus is more susceptible of improvement; there is great need of a small economical hand-press, which would combine the strength of the hydraulic press with the sustaining power of the screw, and need little attention. Two presses lately described in the *Pharmaceutical Journal* appear to me important improvements.

Some improvement ought to be made in our measurement of doses; a drop, a teaspoonful, a wine-glass, are terms far too indefinite and various to be always employed in the administration of medicine, and we shall owe much to the inventor of a better system—a worse would be difficult to obtain.

No study can be more interesting than *Materia Medica*; to know the history of every subject that passes through the hands of the pharmacist adds an interest to his work, which must be felt to be understood. Every day, from all quarters of the globe, are new medicinal substances coming forward; perhaps we even too much neglect the valuable productions of our native soil.

Acclimatization of plants is being largely studied; several plants are on their trial in India and some of our other colonies. Of course, as in chemistry so in *Materia Medica*, the interest centres in quinine. A quinine famine is a thing we dare not think of, the idea is too horrible. The Indian Government cinchona plantations are flourishing, and we expect them some day to be our chief sources of supply, if, meantime, the laboratory does not rise up in competition with them.

There is a large field open in this country to the patient student, in the effects of soil, culture, and climate on medicinal plants. Anyone in the country with command of a small garden, would be amply repaid by making this his study. There is a large range of most valuable medicinal plants, natives of our own country, which should all be made the subject of experiments.

The effects on the medicinal properties of various manures, of judicious leaf and root-pruning where the fruit is required; of encouraging the foliage where the leaves are used,—these are important questions that have scarcely received any attention.

When we read of the enormous sums realized by madder crops, and even by the cultivation of beet in France, it seems that profit as well as knowledge might be the result of such inquiries.

Will no one tell us the cause of that enormous loss we annually sustain, this year worse than ever, by the ravages of the potato disease? No doubt it is a blight, but the existence of that blight shows that the plant is unhealthy, and points to the remedy of obtaining altogether new seed. I am satisfied from my own observation that over-manuring and local seed are strong predisposing causes to the disease. The subject has not been sufficiently studied; the problem is still open to some patient observer, and with its solution, the proud position of proclaiming to a grateful country the means of increasing its food supply.

The analysis of drugs and chemicals must always be an interesting study to the pharmacist, if only from the power it gives him of checking adulteration, and ensuring the purity of his materials.

And now a passing word on botany. I look on this science as an absolute necessity to every pharmacist; but it is such a delightful and easy study, and Providence has so strewn our paths with its beautiful illustrations, that no other inducement ought to be required to capture the inclination of all. No walk can be lovelier where you meet so many well-known friends of the animal or vegetable kingdom. I do not wish to undervalue my fellow-men, but there is more pleasure and more instruction to me amongst the floral paths and woods and forests of the country, than in jostling through the crowded streets of a city. Man made the town and God made the country;

there is no time for reflection in our busy workshops, and if "one touch of nature makes the whole world kin," seek it where it is to be found in the country.

The microscope is now within the reach of all, and it opens the gates of a new world; with its aid minute beauty and order may be seen in everything. Nothing teaches better the greatness of little things, and the harmony of nature. A speck of mould is a magnificent forest, a drop of water is a sea of life, a grain of dust is full of wonders. No student can read the researches of Deane and Brady without longing for a microscope.

At the risk of being considered tedious, I would in conclusion address a few words to the young men. It is for you that the Pharmaceutical Society has been established, you will reap the benefits of it. The founders have left you the legacy of a good name; they depend upon you to make it better; they expect you to raise the standard of excellence, of intelligence until the very name of pharmaceutical chemist shall be widely and generally known as synonymous with pharmaceutical perfection. It is a noble aim, and you have plenty to do to reach it. Let me give you a few hints. You will all some day pass your examinations. The first mistake you will make will be that of cramming up the necessary information, I will not oblige you by calling it knowledge; this is a rock that many split on; let me urge you to avoid it. If I were an examiner (which, thank heaven, I am not), I would pluck without mercy a student who knew the whole *Pharmacopœia*, if he knew it only by rote; we do not want medical parrots. But if I examined a young patient student who knew a little, but knew it well, and who evinced a desire to learn for learning's sake, I would be very lenient with him. In making this selection, I should act in the interests of the Society, because the first man, like an ill-stuffed turkey, would disgorge his badly-digested information immediately after the examination, and never digest any more; he worked for the purpose of passing, and that end being attained, he might as well order his funeral at once, and for any further use his knowledge would be to society at large, they might "see that the body was ready." Whereas the patient student would be a student all his life, and no man can be that without acquiring knowledge always useful to his fellow-men.

The first mistake is too common, and I cannot too earnestly impress on you that examinations are merely intended as tests of knowledge. You ought to study, not for the examinations, but for yourselves; knowledge is power, is money, is happiness, and in the highest of all senses, is everything. Better be plucked if the result be to get more knowledge, than to smuggle through an easy examination; and live and die—a blank.

Another mistake is to suppose that you have not the talent, that you cannot compete with others that have. Abolish the foolish notion; at the risk of being thought a dreadful sceptic, I state here at once that I do not believe in talent; but I *do* believe in industry; and if the two are placed in competition, the latter will always win.

Another mistake that you may fall into is, the idea that you have not opportunities; why, your daily life abounds in opportunities: not a drug you handle, not a poison you dispense but has its history. You ought to know it! Remember the philosopher is the observer of minute differences, he notices just those little things that are beneath the notice of other men, and it is upon these that he builds his theories. Many men saw the apple fall, but Newton alone observed it; and that petty observation has enabled his followers to weigh and measure the solar system. Kettles had been long in use before Watt's time, but in that master-mind a trivial circumstance led to the introduction of a mighty power that does most of the world's work in the present day. Mental blindness is the commonest characteristic of mankind; the habit of daily seeing and never observing the little things that make up our daily life must be shunned. At the risk of offending the Circumlocution Office, be always one of those disagreeable fellows "who wants to know, you know." Make nature tell you the reason why. You will find her wonderfully communicative; and you will find also that, unlike most communicative people, she has plenty of wisdom to impart.

A few words on the economy of time and the dignity of labour. Wellington, Nelson, and all our great men have



been rigid economists of time; it is painful to reflect on the fearful waste of time which is so common amongst ordinary men. The older a sensible man grows the more he is compelled to reflect on the rapid advance of time, but it is often only when his powers begin to fail that he looks back on the days he has lost, never to be regained. Employ the fleeting hours, husband your time as you would a limited purse; whatever you do, do it with all your might, for if a thing is worth doing at all, it is always worth doing well; and this brings me to the dignity of labour. Whoever set about that common notion which couples labour with indignity was no friend to the human race. If there be any inheritance which is more than any other the birthright of every healthy man, it is the power of work. It is a proud legacy directly bequeathed to man by the Great Worker who built the universe. I cannot conceive a higher privilege or a greater pleasure than the capacity for doing work of a high order, and doing it well. An active mind in a healthy body is God's best gift. The dignity of labour is nature's nobility, she admits no idlers among her peers. Remember that the highest animals do the most work; and we as the highest have to keep up the labours and knowledge of 6,000 years of human experience. Do not be afraid of work, do not be a human vegetable. Over-work may have killed a few, but idleness has dug the graves of millions. Besides the few are remembered for the work they have done, the millions have rolled away unheeded and forgotten. And remember, we are promised that for all labour there is a reward. It is difficult with some to appreciate this in all cases. One of you, for instance, may be called on at considerable inconvenience to dispense a difficult prescription, perhaps late at night. The paltry couple of shillings you charge is a contemptuous remuneration to you for that labour. But could you see the effect of the potion your hand has mixed; could you stand by the bedside of the poor patient, some loved one of a family, and see the sorrowing relatives; could you note the light coming back to the eyes and the colour to the cheeks, and know that the crisis had passed, and you had been the means of snatching from the jaws of death another victim,—you would then realize the true value of your labour, a value inexpressible in words or money. So we all work, or ought to work, for the common good. "Work, therefore, while it is called to-day, for the night cometh when no man can work."

### THE RELATION OF CHEMISTRY TO PHARMACY.

*Being the Opening Address of the Twenty-third Session of the Liverpool Chemists' Association, delivered by the President, Mr. E. DAVIES, F.C.S., October 12th, 1871:—*

GENTLEMEN,—In coming before you in the honourable position of your President, I can only look upon myself as an example of your willingness to reward work, earnest and faithful, however imperfect, which has been given to our common object, the improvement of practical chemistry. I trust that my elevation to the office will not cause any distrust in the minds of pharmacists in our Association, lest one great object of its existence should be neglected, by undue prominence being given to the scientific branches of chemical study, for I believe that no sure progress can be made, in this or any other department of science, unless theory and practice, the purely scientific and the purely business views, go hand in hand. The mutual dependence of the scholar and the tradesman each day becomes more evident, and no feature of modern opinion is more striking than the prominence given to science training. There is, however, an erroneous idea in the mind of many that a special department of a science can be taught, and that one man may learn dyeing chemistry, another alkali-making chemistry, and another pharmaceutical chemistry. Now this, in my opinion, is a mistake, and having tried to work (to order) in this way, I find it no use. It might be possible thus to "cram" for an examination, but knowledge to guide a man in the unexpected difficulties of daily life must be built on a broader foundation. It is easier, too, to lay hold of, and to retain a principle than a mass of unconnected detail, and,

for an example, he will more intelligently and more accurately test the quality of drugs, who in a regular course of study has mastered qualitative analysis, than he who has laboriously committed to memory every test given in the Pharmacopœia. I would therefore employ a portion of our time this evening in a defence of pure science, the study of chemistry, as if money value were a thing unknown, and the attainment of truth for truth's sake. And this need not, nay should not be inconsistent with a hearty acceptance of the realities of life, and a careful performance of its meanest details.

To look at the past. There was a time, and it is startlingly near to our own, when there was no science of chemistry, nothing but haphazard, uncomprehended experiment. This was the case in all its departments, but in medicine there was no attempt at system. Even when plants ceased to be gathered under fixed planetary influence, the cause of their specific influences was veiled by the impossibility of separating one definite substance from an organic, heterogeneous mass. But pure chemistry came to the rescue; and we owe to it the long list of vegetable alkalies, many vegetable acids, and we may hope that every drug will, in time, yield its active principle, to be administered in a small compass, and without nauseous accompaniments, which in many cases are useless.

In these researches there was at least some idea of immediate use, and a definite object was before the experimenter's mind; but, not bound by the actually existing, the chemist begins to create new compounds not found in nature, and which to many are the sheerest nonsense, waste of time and thought. Yet in medicine alone we owe to such men chloroform, ether, carbolic acid, etc., now recognised as most valuable means of healing; and no doubt yearly additions will be made to the list. Apomorphia seems certain to win a place in our pharmacopœias, and Dr. Richardson is making experiments with bichloride of methylene, chloride of methyl, amylene, hydride of methyl and methylic ether, which promise to give us an anæsthetic without the danger and nausea of chloroform—methylic ether seeming to be the nearest to perfection.

It has occurred to me that a promising field for investigation would be the study of the state of combination in which the more powerful active principles are found in the plant. The probability is that, whilst the more striking properties of an alkaloid, such as the narcotic effects of morphia, are seen in the free alkaloid or any of its salts, the action of the acid cannot be null. As, in mineral chemistry, salts containing the same metal differ widely in their properties, so it cannot be of indifference what acid we combine with vegetable alkaloids. It is fashionable to exclude all mention of design now, and to urge that quinine and morphia were meant for the use of man is to sacrifice one's reputation for scientific sanity; yet I cannot give up this old-fashioned notion, and if it be true, is it not at least probable that the natural combination will have valuable properties? Meconate of morphia is a preparation in point, and quinate of quinine and igasurate of strychnine would, I think, be worthy of trial.

The pharmacist may say, what is all this to me? Simply this: he will have, ere long, to deal in these things; and ignorant handling of edge tools, as these unquestionably are, is a fertile source of accident. It should never be forgotten that to pharmacists we owe many of these potent remedies, and the names of Robiquet and Pelletier are indelibly associated with the organic alkaloids. We need not, however, confine our attention to organic chemistry; in mineral chemistry new remedies are constantly springing up, and the chemist should know what these new salts mean. In the old time, when there were scarcely any pure definite medicines, the chemist might do without chemistry, and his vegetable *materia medica* was the *sine quid non*. Now we bid fair to make chemistry the chief study, and in the future the knowledge of the actual sources of our medicinal agents may be only interesting to pharmacists in general as objects of curiosity, which they are not called upon to handle.

In connection with this subject, it is remarkable that at the last meeting of the Pharmaceutical Conference, the greatest prominence was given to such subjects as apocodia, hesperidine, and other definite chemical substances.

I therefore call upon all students to make their know-



ledge of chemistry, as of every other branch of study, thorough so far as it goes. "Learn to know it, not to know about it," to use Canon Kingsley's advice; and depend upon it you will pass a better examination, and more intelligently appreciate anything new than by an attempt at "technical" knowledge.

Cramming is the worst phaso of this one-sided work, and should be hated as a lie. For it is a lie, it is a pretence of knowledge to veil ignorance, and like all lies lands its user in disgrace. And it is a transparent veil, for any examiner up to his work is sure to detect it; it has an artificial look, and is sure to have weak points. Practical work is the best means of avoiding this snare, and although lectures, illustrated as fully as possible, are the best means of showing the formation of chemical bodies in the actual position of most pharmaceutical students who have no laboratories and not too much money or time, yet analysis, qualitative at least, can be carried on with half-a-dozen test tubes and the chemicals around them. But then the knowledge of this should be more than that such a test reveals the presence of such an impurity, and then, when the reason of the test is shown, the student finds that each analysis includes a synthesis, and thus both sides of chemical practice are seen at once. The present state of pharmacy in England will justify me in making my address mainly a call to exact scientific knowledge. Knowledge was always good, now it is indispensable, and from pharmacy will shortly be banished the reproach that it was the one business that a man could conduct without any knowledge of the things he dealt in. The grocer knows the quality of his tea and sugar, the draper is profound in fractional differences of value in his wares, and the pharmacist should be at least as well informed in his line, nay, rather, should be incomparably more so, for you or I can form a very fair idea of our food and clothing for ourselves, but the outside world have and can have no means of ascertaining the value of what they get out of a chemist's shop, whilst the issues involved in the two cases have no standard of comparison. I shall survive a bad coat, and possibly may a cup of Moning congou, but the quality of a drug may make the difference of life and death. Who, then, will any longer speak of the hardship of having to prepare for so responsible a vocation.

Then the examinations have a distinct and definite value. Conducted under independent control, the public have a guarantee that they are a real protection, and a report of the examinations will impart a confidence to the public which I fear they were losing. Perhaps the *Pall Mall Gazette* may have exaggerated the terrors of the public when it suggested the desirability of hanging a chemist, but such a suggestion would have fallen very flat if it had been known that every chemist knew what he was about, and that no ignorant man was in the profession. In one generation this vision will be realised; and before that time year by year will thin the ranks of the incompetent, and swell those of men whom the world will trust without fear.

I have no wish to trespass on such dangerous ground as that of regulations for storing poisons. Yet the cry for them, not at all general, I grant, seems to me the natural result of the action of chemists themselves. Have they not urged the importance of compulsory examinations, and pointed to the public the danger of uneducated men being allowed to handle poisonous drugs? Can it be wondered that the world believes what it has been so earnestly told by those who ought to know best, and that as the men are there and cannot be turned out, precautions should be insisted on? May an outsider, in one sense, be permitted to make the suggestion that voluntary regulations, to be of any good in satisfying a public demand, must be made public, and that the world must know who does and who does not adopt them? I trust this guarded allusion to the subject may not expose me to the wild attacks of some warriors who show that, alas! man is a fighting animal by nature, and can hardly believe that any one who opposes him is sane or honest.

Few things are more remarkable in our English manners and customs than the respect we pay to the right of every man to do wrong. I know that there are laws and penalties for breaking them, but there is a tenderness, especially for highly respectable sinners, that contrasts sharply with the

practice of our Continental neighbours, and even of the Americans. In nothing is this more strikingly shown than in our laws with regard to adulteration. First there is a statement that there is a great deal of adulteration, that adulteration is a very bad thing and ought to be punished; and then follows a law screening the malefactor in every possible way, and giving the utmost possible trouble to any one moving in the affair, coupled with conditions to render a conviction impossible unless the adulterator is an absolute ass, which, as a rule, he is not. The public conscience is then satisfied, and we wait for a time to see what will follow. Of course nothing follows until a roused British public again stirs itself, to be pacified by a repetition of the farce. Nothing will put down adulteration until the law makes the seller responsible for all adulterations, injurious or not, and then let him, if innocent of actual knowledge, have his remedy against the manufacturer. I say adulterations, injurious or not, for in many, nay, most cases, the admixture is one which no chemist can stand in a witness-box and swear is in itself injurious to health. It is robbery which is to be punished quite as much as doing bodily harm, but who can tell the injury done to health by a mere diminution of nutritive power in food by the addition of a substance harmless *per se*.

Certainly, if a man sold anything openly as a mixture, no objection could be taken; but what a disgrace to English tradesmen that it is supposed to be necessary to ask them if their goods are pure, and that if you do not, you are to have no remedy, the assumption being that you were a fool to trust to their honour.

Among pharmacists I am willing to believe that there is not much wilful addition to their drugs; and in this I am borne out by the analysis of some 150 articles purchased by the Sanitary Association of Manchester several years since and analysed in a laboratory in which I was an assistant. But the use of inferior qualities of drugs, I fear, cannot be denied, and no Act of Parliament will ever reach this. Nothing but a higher sense of honour, a feeling that it is a shame to violate the trust placed in them, which we may hope to be a result of higher education, will remove the temptation from what I believe to be a minority of pharmacists, to swell their profits this way. Of course I may be told the public are themselves to blame, they will have food and medicine cheap, and therefore must have it so, and also nasty, but I do not see that this is the necessary result, and I would ask, is not the public more tempted than tempting?

A question which is in my opinion of the highest importance to you as subject to the Pharmacy Act, is, how this education, which we all say is a good thing, can be obtained? I have no means of obtaining a correct figure, but should say that in Liverpool there are 200 young men who will have to pass an examination before they can begin business.

I am of opinion that it will be found necessary eventually to have an independent school of pharmacy, where instruction in all branches necessary to be known by pharmacists can be obtained. But then two things will be necessary, 1st, a more thorough conviction on the part of employers that they have duties as well as rights towards young men in their employ. 2nd. Those who enter upon this calling must expect to find their education costly in comparison with that of their predecessors. Education given gratis, or indeed at anything under the fair market price, ought not to be looked for, nor can it be depended upon as a certainty. To ask a young man intending to enter upon the calling of a pharmacist to spend, say £10 each year of his apprenticeship on lectures and practical chemistry, may seem hard, but so far as his calling is to be looked on as a profession, there must be a professional training.

This is not a trade society; it does not lay down laws for the regulation of business, nor interfere with the right of every member to pursue his own course of action. Its expressed object is "the advancement of chemical and pharmaceutical science." All therefore who wish for this are welcome, and if they can tell us something new, whether money can be made out of it or not, they are doubly welcome. At the same time the Association is not a speculative society, with no practical action. Business, yours and mine, must be attended to, we must live, at least we see the necessity, and improvements in carrying on such business, or social reforms bearing on it, are fair subjects for our consideration.



Your Council in their report ask for more pharmaceutical papers. I hope I shall not be supposed to be advocating a course of opposition to the Council in any remarks that I have made, rather, as Arnold said of religious books, we do not want more of these, but rather works on secular subjects religiously treated, so I do not ask for pure chemistry papers, but pharmaceutical papers treated in the spirit of pure chemistry; and not chemistry alone, but botany, hitherto conspicuous by its absence, should have its fair share of attention, and I trust that materia medica, both chemical and botanical, will be represented in the report of the proceedings of this session.

The results of the microscopical examination of drugs as a test of their purity is another subject worthy of notice. In the discussions let there be life. If the reader of the paper is wrong correct him; if you differ from him do not fear to express it. I would rather be soundly attacked and put on my mettle in defence, than receive nothing but formal thanks. Most readers of papers, I think, will feel with me that criticism—sharp, if necessary—is preferable to want of interest or unfelt adulation, so long as it is good-humoured and fair.

The Council's call for short papers I will endorse. It is a rather serious thing to set oneself the task of occupying an entire evening of the Society; but surely a single observation, fairly studied and worked out, is within the reach of many of our members. We should thus get some original observations, I hope, and greatly increase the value of our proceedings.

#### CHEMICAL SOCIETY.

November 2nd, 1871.

DR. FRANKLAND, President, in the chair. After the usual business of the Society had been transacted, a paper on "A Process for the Estimation of Fluorine," by A. Liversedge, A.R.S.M., was read. It consists essentially in distilling the fluoride with concentrated sulphuric acid and silica, passing the silicic fluoride which is evolved into ammonia, and then determining it as silico-fluoride of potassium. An interesting paper was then read by Mr. W. H. Perkin, F.R.S., on "Anthraflavic Acid," a yellow crystalline substance which accompanies artificially-prepared alizarine, and with which the author finds it to be isomeric. The barium compound crystallizes from water in reddish-brown needles, which contain a considerable amount of water of crystallization. There was also a paper on "The Distillation of Wood," by Mr. Watson Smith.

#### THE DANGER OF MINERAL OILS.

By PROFESSOR ATTFIELD.

WE reprint from the *Times* of October 30th, the following seasonable letter from the pen of Professor Attfield, indicating, probably, the chief source of accidents from petroleum; namely, the ignorance of its real character on the part of those who use it. The writer says:—

"In a previous letter I drew the attention of your readers to the fact that many conflagrations resulting from the incautious use of the different varieties of mineral oil were due to ignorance on the part of the public respecting the relation of these liquids to fire. I showed that paraffin oil, petroleum oil, etc., being sold and used under the name of lamp oil, most consumers naturally treat them with neither more nor less care than is observed with sperm or colza and the old vegetable lamp oils; whereas in the readiness with which they catch fire they more closely resemble turpentine or spirits of wine, and should be handled, carried, and stored with all the precautions commonly adopted in manipulating these inflammable substances. I now venture to point out one other, and the only other dangerous property peculiar to mineral illuminating oils—one which also is liable to produce serious results in proportion as it is unknown or unrecognised—I allude to their property of giving off vapour, and under certain circumstances of their being entirely converted into vapour, which with air forms a mixture which will explode on the approach of flame.

"Last Friday evening, in one of those well-known open-air markets for the poor—Upper Whitecross-street—some children were playing with a recently emptied mineral oil cask. With an originality of mind out of which may some day grow invention and discovery, a boy dropped a piece of lighted paper into the bung-hole of the barrel 'to see what would happen.' A loud explosion followed; the head of the cask was blown out, and the poor children sent hither and thither. One lad was immediately taken to St. Bartholomew's Hospital, where he lies terribly frightened, but, I am happy to learn, not badly hurt. From personal inquiries, I believe that the barrel had contained, not paraffin oil nor petroleum oil, but petroleum spirit, the vapour of which, rising from the saturated staves, had mixed with the air in the barrel and formed an explosive atmosphere.

"Petroleum spirit is largely used as lamp oil by the poor. At all common temperatures, it gives off vapour sufficiently fast to produce with the air in the vicinity a mixture having properties identical with those of a mixture of coal gas and air, that is, it will explode the moment it is ignited. What I want to urge is, that, whereas the leakage of gas into the air of a room is known to most people to be attended by danger if a flame is allowed access, the escape of mineral oil vapour into a confined space of air is not so generally known to be an exactly similar operation attended by similar danger. Petroleum spirit, as I have said, always emits such vapour, petroleum oil must be warmed to the temperature of a hot summer's day before it evolves the vapour, and paraffin oil must be much warmer than that; still, all the mineral oils are far more readily vaporized than the old animal and vegetable oils. Indeed, the latter are not truly vaporizable at all, requiring to be made as much hotter than boiling water as that is hotter than freezing water before they afford inflammable vapour. All oily and fatty substances burn more freely than most things, but during the time that the heat of a great fire is decomposing the so-called fixed vegetable oils and animal fats and feeding itself with the gases produced, the mineral oils, being volatile, are at once and directly converted into immense tongues of vapour or gas, hence they supply fuel to and spread a fire with a rapidity unknown and impossible before they became articles of trade.

"Mineral oil fires and explosions are becoming common. A week seldom passes without the London newspapers recording something disastrous, in which they play a part, has occurred on one or other side of the Thames, between Erith and Chelsea. The more spirituous kinds cause explosions in bottles, cans, barrels, and ships' holds, whence result frights, accidents, and conflagrations, while the other varieties, stored indiscriminately, and without proper care in the cellar of the shopkeeper or the warehouse of the dealer, stand ready to catch light or feed the flames of a fire with a quickness unequalled by any common combustible, and not excelled by turpentine or brandy. Such deplorable consequences, result, I maintain, not so much from the peculiar properties of these justly valued oils as from the ignorance of the public respecting those properties. A pint of petroleum is in itself less dangerous than a phial of poison, a sharp knife, or a flask of powder; dangers attending the use of the three latter are known and recognised, hence evil consequences seldom follow their employment, except in cases of wilfulness or carelessness. But the facility with which mineral oils catch light, and their readiness to assume the condition of vapour that gives with air an explosive mixture (for neither the liquid nor vapour is itself explosive, are facts not generally recognised; hence, in addition to accidents caused by wilfulness like that of a Paris *Pétroleuse*, or by carelessness, we have many produced through ignorance, and these are preventable. When those who possess the requisite knowledge have given it, the press disseminated it, and the public accepted it, such accidents will cease to occur. Till then they will continue to happen; for the consumption of these cheap and brilliant illuminating agents is largely and deservedly on the increase."

At the meeting this year of Russian naturalists in Kiew, the Section of Chemistry was presided over by a lady named Anna Volkow.



## THE RISE AND FALL OF CUNDURANGO.

LITTLE more than three months ago, this addition to the *Materia Medica* was introduced into the United States with such triumphant praises as had perhaps never greeted a comparatively unknown medicinal agent in any country before. Lately we have taken up no American medical or pharmaceutical journal which has not joined in the howl of execration against the disgraced favourite.

But yesterday, the word of Caesar might  
Have stood against the world; now lies he there  
And none so poor to do him reverence.

Dr. Bliss, of Washington, Professor of Urinary Pathology in the Medical Department of Georgetown College, had the honour of introducing the medicine into American practice. He heard of it through the ambassador from Ecuador, South America, whom he was attending, and the Government of Ecuador transmitted to the Government of the United States, a portion of the shrub, with printed testimonials, of its successful employment as a cure for cancer, from eminent South American physicians. According to Dr. Bayon, of Guayaquil, it belongs to the order *Eupatoriaceæ*, and species *Mikania guaco* of Endlicher, and its name of "cundurango" in the Quichua language means vine of the condor. It is the same plant that is called the guaco in Colombia. According to the tradition of the country, when the condor is bitten by a poisonous serpent it swallows the leaves of the guaco plant, and experiences no harm. In Colombia there are said to be three varieties of the guaco—green, purple, and white—the purple variety being intensely bitter, the white less so and more aromatic, while the green has more astringency.

The first experiment made with it by Dr. Bliss, was on Mrs. Matthews, the mother of the Hon. Schuyler Colfax, the Vice-President of the United States. According to the published statements the effect was almost magical. Almost at once the pain was relieved, and in about a month the cancer had been so much reduced that the doctor and the patient were both confident of an early and complete recovery. The cundurango was tried with similar results on other sufferers, and to the report of his own experiments Dr. Bliss added, that letters have been pouring in upon him from persons at a distance, suffering from cancer, who had had the opportunity to use but a very small portion of the remedy, and yet who reported marvellous improvement in all the symptoms.

Such was its introduction. All the newspapers reported this wonderful cure for cancer, and, as might well be expected, sufferers from that fearful disease were willing to spend their last shilling in the hope of obtaining such relief as was reported in these few cases. If this was, as is plainly stated by many of the American journals, only a new advertising trick throughout, it was certainly one of the most heartless on record. There is this to be said. We have not observed that the original statements of Dr. Bliss, have been either disputed or proved. But, on the other hand, we have not noticed that even he has reported a complete recovery in any instance; it is asserted that four out of the six patients concerning whose cases he at first wrote have since died; and it is certain also that in other hands the cundurango was invariably found to be utterly useless. The President of the Republic of Ecuador, it seems, sent some of it some time ago to the Queen of England, with the statement that it had been tried by several of the doctors in the Republic, and had proved to be a cure for cancer, syphilis, and phthisis. As any remedy reputed to be of service in such destructive and fatal diseases was worthy of trial by physicians and surgeons in this country, Lord Granville, at the expressed wish of her Majesty, sent a packet of the cundurango root to the College of Physicians, at whose disposal it was placed. Accordingly, it was divided by them into three parts, one to be sent to the Radcliffe Infirmary, Oxford, another to St. Bartholomew's Hospital, and the third to the Middlesex Hospital. No use seems to have been made of it until the excitement concerning it was heard of from America, and then it was tried in several cases in the Middlesex Hospital. In each instance it was a perfect failure. Mr. Hulke, under whose care it was administered, writes, "As a reputed remedy for cancer, cundurango is in my opinion perfectly inert and useless."

We find statements in the American journals to the effect that Dr. Bliss has on hand 26,000 orders for cundurango. Another says that the demand is so great, and the supply so small, seeing that it has to be brought "from the almost inaccessible regions of the Andes," that it is now worth one hundred dollars per pound. Under these circumstances, as a third medical journalist, remarks with a shade of envy, "Bliss has a good thing, Bliss can make stamps out of it if he plays his cards well." In the *Leavenworth Medical Herald*, we read:—"The name of the article is a taking one. Cundurango sounds grandly when properly pronounced. It requires a peculiar twist of the tongue to give it full effect, and is all the more effective on that account. Coming from a foreign country, introduced through high official channels, recommended by one of the leading physicians of the Capitol, and endorsed by so high a dignity as the Vice-President of the United States, it would be strange indeed if it did not have a large sale. Unfortunately, however, four of the six persons upon whom its extraordinary virtues were tried, suddenly took their departure to a foreign clime, with the mere ghost of a chance of their return, and the other two are preparing to make the same journey, determined, however, to shout *cundurango!* with their last expiring breath."

This writer concludes with a poem to commemorate the affair, from which we quote a couple of stanzas:—

The morning sun was shining bright  
As lone upon old Georgetown's height,  
A Bliss-full doctor, clad in brown,  
Desiring wealth and great renown,  
Displayed aloft to wond'ring eyes  
A shrub which bore this strange device,  
Cundurango!

A maiden fair with pallid cheek  
With ardent haste his aid did seek  
To stay the progress and the pain  
Of carcinoma of the brain;  
While still aloft the shrub he bore,  
The answer came with windy roar,  
Try Cundurango!

## DISSOLVING VIEWS.

THE chemists' and druggists' apprentices, and the chemists' and druggists' assistants, have been of late, and still are, the objects of considerable pharmaceutical solicitude; much to the honour, he it said, of those who sacrifice so much for the welfare of others. For real earnest-hearted aid it is strange indeed if those to whom it is offered are not grateful. But it is not altogether wonderful if apprentices and assistants in some circumstances should receive well-meant but unpractical advice rather superciliously. The advice may not be unpractical to all, but the worst of it is that it is generally applied with the most universal rigour.

Because a young man is a druggist's assistant, he is not therefore exempt from the foibles of human nature. In spite of the superfluous ethics and rhetorical flights of his higher-genteel preceptors, he will take a mercenary, and, it must be admitted, a somewhat common-sense view of his position. To him, pharmacy is no abstract science, on the study of which he can speculate and philosophize in spiritual rhapsodies—to him, it simply means the source of his daily bread; and viewed in this light it is astonishing how the whole aspect of the affair changes. For instance, he may reason thus with himself: "I have chosen the vocation of a chemist and druggist, and by passing the minor examination of the Pharmaceutical Society, I am legally qualified to assume that title. I am presumably competent to discharge my duty as a pharmacist, why then should I spend time and money—both of the greatest value to me—in studying for the major examination? Will it secure for me greater honour or more patronage from the public, which would be just as edified if I styled myself Member of the Board of Health of the Fiji Islands, as with the title which the 'Major' would confer upon me?" Who shall deny that there is considerable force in such an argument, or rashly essay to overthrow the stern logic of pounds, shillings, and pence.

And, after all, which of the two is the more likely to succeed, the gentleman fresh from Bloomsbury-square, who rejoices in a white cravat, cultivates a severe cast of countenance, and screens the windows of his pharmacy with wire



## DR. GLADSTONE ON FARADAY.

blinds, or his less ambitious but shrewder friend who, though his shop is of the handsomest, and his own appearance of the most engaging description, nevertheless thinks it not derogatory to sell a tooth-brush, to handle a bottle of soda-water, or to descend to even lower depths? What the result would be, were we to carry into practice the fanciful ideas and whimsical crotchets of some of our advisers, it were indeed hard to say. One, for instance, condemns *in toto* the sale of patent medicines, another regards as dire heresy the keeping of fancy articles, whilst a third hurls copious anathemas at anything approaching a "mixed" business. It would be an amusing experiment to place one of these gentlemen in a chemist's business in a country town, taking particular care that his only remuneration should be the "fees" he received for dispensing prescriptions. We venture to say, that in less than a week he would be only too glad to change places with an inmate of St. Pancras workhouse. Dispensing alone never can and never will support the country druggist; so the sooner our West-end pharmacists get rid of that idea the better will it be for all concerned. We often hear a good deal of grumbling because surgeons dispense their own medicines. Do these fault-finders forget that there are others who require medical advice besides those who can afford to pay a guinea for a prescription? Vast numbers of the poorer classes expect to receive a visit from the doctor and a bottle of physic all for the munificent sum of two shillings and sixpence! And, indeed, this amount—paltry though it seems—is sometimes more than they know how to spare. What other course then is open to the surgeon than to supply his own medicines? Could he obtain an adequate fee for visiting, he would no doubt gladly relegate the dispensing to those whose particular business it is.

It is said of Napoleon III., that in all the ruptures between France and other Powers which occurred during the second empire, he invariably fought for "an idea." It was an "idea" which entangled him in a war with Austria; it was for an "idea" that those dreadful scenes were enacted in Mexico; the miserable complications which dragged us into the Crimean war were the result of an "idea;" and finally it was an "idea," as he himself has confessed, which caused him to throw down the gauntlet to Prussia in 1870.

Those worthy gentlemen who are so anxious for a revolution in things pharmaceutical seem likewise to be contending for an "idea." The "idea" which possesses them is, that the business of a chemist and druggist ought to be considered on a par with any of the learned professions, and that it is to obtain this dignity that the "trade is now panting and aspiring."

Now if they will just pause to take breath for a moment, and send a flash of the electric light of common sense across the question, they will, we think, be convinced that their "idea" is nothing but a phantom—a mirage of pharmacy. In so far as it can be shown that the pharmacist receives a "fee" for dispensing a prescription, we grant that he does in a very microscopical sense become a professional man; but what shall be said of him when he sells an ounce of cough lozenges or a box of seidlitz powders—is he not then to all intents and purposes, a *tradesman*? And he will have to adopt a very novel style of reasoning who thinks to persuade the public otherwise. Comparisons are odious, and we would upon no account presume to estimate the relative value of a "trade" and a "profession," nor to determine why one man should get the *entrée* to a certain grade of society solely on account of the nature of his employment, whilst another, of perhaps superior abilities and attainments, should be excluded for precisely the same reason. We only have to deal with the facts as we find them, and arguing from these we shall we fear too often experience the treatment pursued by the promoters of the "Hogmorton Ball:"—

"They've quite excluded Mr. Squills,  
"Who makes the antibilious pills,  
"Not 'cause he *makes* them; but they say  
"He sells 'em in a retail way."

Away then with such high-flown notions of respectability. "I consider nothing that is honourable," said the noble-minded Henry Deane, "beneath the dignity of an honest man"—an aphorism which some of our "professional" druggists would do well to remember.

QUILL PEN.

A LECTURE of much interest was delivered at the London Institution, on November the 2nd, by Dr. J. H. Gladstone, F.R.S., "on Michael Faraday: the Story of his Life." To an intimate personal acquaintance with Faraday, Dr. Gladstone united a reverence for his character which amounted almost to hero-worship. He sketched his early career, now so well known, as a bookbinder's apprentice, and told how Faraday, ardently loving and seeking for knowledge, strove, and at last succeeded in his efforts to free himself from trade, and devote his life to the pursuit of science. Many years, after when his fame had reached its zenith, and all his surroundings were pleasant, a lady congratulated him on his success and happiness. He told her that when he left business he expected to leave behind him all the meaness and the sordidness which existed there; but in scientific pursuits, he said, he found human nature just the same. His work and travels on the Continent with Sir Humphrey Davy as his assistant were to Faraday the substitute for a university career, of which he took the utmost advantage. He became the prince of experimenters, and one of the most attractive scientific lecturers attached to any institution. Especially in his Christmas lectures to juvenile audiences did Faraday excel. On those occasions the front seats of the theatre at the Royal Institution were reserved for children; and although the lectures conveyed a vast amount of chemical science, it was so easily demonstrated as to appear as clear to his youthful auditors as to the philosopher himself. Commencing with a candle, or a kettle, or some common object with which they were all familiar, Faraday led them on to subjects which they knew nothing of before, and impressed every new fact on their minds by his beautiful experiments. In making these experiments, he seemed to manifest as much delight at the success of any of them as though he himself had never seen it before, and he never failed to communicate his enthusiasm to his audience. Faraday never sought but one honour; that was Fellowship of the Royal Society. This was conferred on him in 1824. Honours and degrees of every kind were afterwards showered upon him, and at last he possessed no less than ninety-five titles. Three times he was made a doctor; he received several decorations from foreign courts, and a life pension from the British Government, and was an honorary member of almost every prominent scientific association in Europe and America. He declined the highest scientific honour which England could give, the presidency of the Royal Society; and he also discontinued commercial analysis, although it brought him a large addition to his income, for he found it interfere with scientific investigation. He did not attempt generally to apply his discoveries practically; their great worth consisted in the increase of human knowledge. But he worked very hard in the application of his discovery of the magneto-electric light to the lighthouses around our coasts.

Dr. Gladstone referred especially to the beauty of Faraday's character and of his home life. From his earliest years, he was faithful in the discharge of every duty. He was invariably kind to all around him, and to all with whom he came into contact, and though he shrank from publicity, his private charities were very great. His income was larger than was generally supposed. From 1835, to his death in 1867, it could hardly have been less than £1,200 a year, and at one period it was much more. He lived in the most simple manner, and yet he spent it nearly all, and the lecturer believed that some hundreds of pounds were devoted annually to charitable purposes. His playfulness, or rather joyous gaiety of character, was one of the charms of his company, and one of the secrets of his success. For he could always thoroughly enjoy his recreations, and thereby return with refreshed energy to his serious work. His connection with the small religious body of the Sandemanians was maintained through life, and every Sunday and every Wednesday evening Faraday was constant in his attendance at the little meeting-house of which he was an elder. Towards the close of his life, he accepted the graceful offer of the Queen of a pretty little cottage at Hampton Court Green, and there he spent the greater part of his latter years. When his memory began to fade, he bore his affliction with his usual tranquillity and resignation, and he died full of honours, and with the affection of all who had known him.



# Pharmacy.

## A NEW STYPTIC.

**COLLODION**, 100 parts; carbolic acid, 10 parts; tannin (Pelouze's), 5 parts; benzoic acid (from gum), 5 parts. Mix the ingredients in the order above written, and agitate until perfect solution is effected. This preparation has a brown color, and leaves on evaporation a strongly adherent pellicle. It instantly coagulates blood, forming a consistent clot, and a wound rapidly cicatrizes under its protection.—*Carlo Parvesi. (American Journal of Dental Science.)*

## CHLORAL FOR TOOTHACHE.

Dr. Page, in the *British Medical Journal*, recommends chloral hydrate as a local application in cases of toothache. A few grains of the solid hydrate introduced into the cavity of the tooth upon the point of a quill speedily dissolve there; and in the course of a few minutes, during which a not unpleasant warm sensation is experienced, the pain is either deadened, or more often effectually allayed. A second or third application may be resorted to if necessary.

## KOUSSIN.

At a recent meeting of the Society of Physicians at Vienna (reported in the *Allgemeine Medicinische Zeitung*), Professor Leidesdorf reported that an examination of the leaves of the *Brayera anthelmintica* resulted in an extraction of a better resin, called, by Pavesi, *koussin* or *tenin*. Pure koussin is light yellow, smells like Russia leather, hardly soluble in water, but readily so in alcohol and alkalies. Its formula is,  $C_{26}H_{22}O_5$ . It can be given in a dose of a scruple, followed by a second dose in two hours. Three or four hours after taking these doses the tape-worm is expelled. It needs no preparation of the system; has no after effects.

## CHLOROFÆTIDA.

Mr. L. D. Heaton (Victoria, Texas) communicates to the *American Druggist's Circular* the following:—

I have prepared an article, called by Dr. Sutherland and myself chlorofætida. It is prepared, as the name would suggest, of chloroform and assafætida. I give the formula:—

Take Gum assafætida	.. ..	½ ounce.
Chloroform pur	.. ..	2 fl. ounces.

Macerate fourteen days and filter through paper, taking care to prevent evaporation. The above makes a thoroughly saturated tincture of the gum, and it is more ready in its action than any other preparation. Dr. Wm. Sutherland has had occasion to use it several times, and to his perfect satisfaction. He mixed it with glycerine for a vehicle.

I made the above preparation about a year ago and used it in the following manner:—

Take Chlorofætida	.. ..	½ ounce.
Camphor	.. ..	1 ounce by weight. Mix.

Twenty drops every half hour for diarrhœa and also for colic. I found it to work like a charm.

One more item. I had some pills of assafætida to make for a prescription. The gum was hard to work, and I resorted to chloroform with which to make the mass. I found that by triturating in a mortar I could make a fine mass easily.

## SYRUP OF SANTONATE OF SODA.

J. Donde, in the *American Journal of Pharmacy*, gives the following formula for a good vermifuge syrup:—

Santonate of soda,	30 grains,
Distilled water,	1 ounce,
Syrup	18 fluidounces.

Boil the syrup till it is concentrated to 32° Bme. Remove from the fire, let it cool a few minutes, then add the salt dissolved in the water.

You obtain eighteen fluid ounces of a transparent syrup, without a bitter taste, of 35° when cold. Each fluid ounce contains one grain of santonine.

## Santonate of Soda.

Santoninic acid, in fine powder	2 ounces.
Caustic soda lye, pure	4 fluidounces.
Distilled water,	12 fluidounces.

Put all in a flask, and heat in a sand-bath, or over a stove, to 70° or 80°, until the solution of the santonine is complete, which usually requires about half an hour; then remove from the fire, and when cold it is conveniently evaporated. In cooling, prismatic crystals with an oblique base are obtained, containing 54 per cent. of santonine.

When the solution is evaporated until a strong pellicle is formed, on cooling it is converted into a mass of acicular crystals of a pearly aspect, which contain 60 per cent. of santonine.

The santonate of soda is soluble in 1½ its weight of water (20° C.), and has a slightly bitter taste.

## CURE FOR CORNS.

Bathe the feet well in warm water, then with a sharp instrument pare off as much of the corn as can be done without pain or causing it to bleed, and dress once a day with the following salve:—

R Black oxide of copper	.. ..	gr. 15.
Lard	.. ..	3 s. M.

## EXTRACT OF HORSE CHESNUT WOOD.

For dyeing heavy black upon silk, an extract of horse chesnut wood has recently acquired great importance. It is preferred to nut-galls or divi divi for this purpose. The what particular principle in the wood is to be ascribed the important property, of which use is now made, has not been determined with certainty.

## PSORIASIS.

R. Lowther, M.D., of Cartmel, writes to the *Lancet* that in the treatment of psoriasis he has used for some time a solution of pure carbolic acid, two to four grains to the ounce of water, locally, with the best results. He considers this solution to be more reliable, and much less objectionable to the patient, than the application of pitch ointment. It is often difficult to get patients of the upper classes persuaded to make proper use of the ointment, and on this account much of the failure depends. The patches of psoriasis must be kept constantly moist with the solution of carbolic acid, while the constitutional treatment is not neglected.

## CLEANING GLASS VESSELS IN WHICH PETROLEUM HAS BEEN KEPT.

In Dingler's *Polytechnisches Journal*, the following method is given for this purpose:—Wash the vessel with thin milk of lime, which forms an emulsion with the petroleum, and removes every trace of it, and by washing a second time with milk of lime and a small quantity of chloride of lime, even the smell may be so completely removed as to render the vessel thus cleansed, fit for keeping beer in. If the milk of lime be used warm, instead of cold, the operation is rendered much shorter.

## CROTON-CHLORAL.

Dr. Oscar Liebreich has lately been engaged in investigating the physiological and therapeutical properties of a new organic compound called croton-chloral, which is formed by conducting chlorine gas into allylene. A peculiar action of this new substance in animals is, that at first a high degree of anæsthesia in the head is produced, while sensibility in the other parts of the body remains intact. The second stage is, that the spinal cord loses its function, and reflex excitability is everywhere extinguished. During that stage both pulse and respiration remain unchanged. The third stage, which is induced by large doses, is characterized by paralysis of the medulla oblongata, and death. Animals may, however, be kept alive by artificial respiration, because the function of the heart is not interfered with; while the ultimate effect of hydrate of chloral is to paralyze the heart. The first therapeutical experiments with the new compound were made in the University Clinique of Berlin. Complete anæsthesia of the fifth pair of cerebral nerves was produced in a child, reflex excitability in the other parts of the body



continuing unchanged at the same time. Pulse and respiration remained exactly the same during the whole time of the narcosis. Further experiments in insano patients showed that we possess in croton-chloral a remedy by means of which the brain may be profoundly narcotized without any other functions being disturbed, while by chloral not only the brain, but the nervous system altogether, is rendered anæsthetic, and the heart's action is diminished, which must always constitute a source of danger.

Dr. Julius Althaus (who reports these investigations in the *Medical Times and Gazette*) considers, therefore, that croton-chloral promises to produce all the good effects of hydrate of chloral without any drawback being attached to its judicious use. Its apparently specific effects on the fifth pair of cerebral nerves makes us indulge the hope that it may perhaps be found useful in that most intractable affection—*rue tic douloureux*, or epileptiform neuralgia of the face.



## HISTORY OF PHARMACY.\*

(Continued from page 322.)

IN Spain the author's researches commenced by recording the decrees promulgated by Don Alonzo of Savoy, A.D. 1252, restricting the sale of drugs in the Peninsula. The first Spanish Pharmacopœia is due to Matthew Benedict, in the year 1457, who is described as the first pharmacist writing of his art. Another author of this period mentions a druggist condemned to a fine of 9,000 ducats, and the loss of his civil rights for the space of one year, for having adulterated manna with sugar and starch. In the year 1800 Don Carlos decreed pharmacy a distinct profession from that of medicine, and ordered the annual inspection of all shops. The acquisition of the diploma of licentiate in pharmacy is attended by elaborate academical ceremonies. A procession is formed, and marches in to the sounds of music; the candidates take the oath of allegiance to the Faculty, and swear to follow out all the instructions of the Codex. The number of druggists is not limited in Spain, but all contraventions of the rules are very severely punished; such as practising medicine clandestinely, or trading in any way calculated to dishonour the profession. The author then proceeds to describe the state of pharmacy in Germany, Austria, Holland, and America; but as so much concerning these countries has appeared in these columns it is needless to quote from the very exhaustive chapters devoted to them.

China is next referred to, and as any information concerning this extraordinary people must prove interesting, we quote the following passages:—

"The poor people seem to be the principal prey of quacks, but the rich mandarins, merchants, and literary men seek the advice of really educated and renowned doctors, who are paid a certain annual stipend, which ceases when any member of the family falls ill. John Barrow, in his 'Travels in China,' relates seeing a travelling Chinese charlatan selling a wonderful powder, which he pretended to be a specific for serpents' bites. To convince the crowd of the prompt efficacy of his remedy, he carried with him a snake of the most venomous species; he then applied the sting of the reptile to the point of his tongue, which swelled up so rapidly that his mouth could scarcely contain it. He appeared to suffer horrible tortures, in order to excite the commiseration of the spectators. Then, on applying a little of the miraculous powder to his tongue, the swelling disappeared, as if by enchantment. On examination, he was found to have a small bladder in his mouth, which he could inflate at pleasure. Question, whether this Chinese plan of advertising is not in advance of ours.

"Chinese pharmacies are large and convenient; a certain knowledge of *Materia Medica* and therapeutics is required of the owners, who prepare medicines in the most conscientious and scrupulous manner.

"Although no legal formalities prevent anyone from opening a pharmacy in China, special study of the official language in which the prescriptions are written is requisite, so that in nearly all cases sons succeed their fathers in the business. The Chinese Pharmacopœia is composed of fifty-two large folio volumes. A Chinese prescription is written on a large card, in red and black characters. One hour or more is occupied in writing it. The doctor's fee is equal to about a shilling of our money. It is then taken to a pharmacist, who examines it attentively before dispensing it. Common drugs are folded in white paper, and the more expensive in red. Ginseng is a favourite remedy, and costs about £5 an ounce. Very few bottles are to be seen in a Chinese store; the drugs are put each separately in a compartment of their own. Camphor, rhubarb, liquorice, cinnamon, and nearly all our drugs are kept; but the purgative neutral salts and tinctures, so much used elsewhere, do not find a place in a Chinese dispensary. They put up hosts of specialities for cholera, for coughs, for infusing courage, for rendering one virtuous, and for exciting to love and to be loved, all of which are in general quite innocuous preparations. The Emperor Ching-hong, B.C. 3216, was their first pharmaceutical author, and is honoured as the founder of both medicine and pharmacy."

In Persia a Latin Pharmacopœia, dated 1681, was edited by a missionary monk, but little authentic is known concerning the pharmaceutical history of this country.

Turkish pharmacy dates from 1804. Previous to that epoch there existed certain pharmaceutical works in the Arabic language, in the library of St. Sophia, but during the reign of Mahomet II., grandfather of the present sultan, a faculty of medicine and pharmacy, similar to that of Paris, was established in Constantinople. The instruction is given in French, and the "stages" are the same as in the French capital.

The author finishes by describing the pharmaceutical history of his own country, and concludes by a treatise on the advantages of recognising pharmacy as a scientific profession, and not as a trade.

Concerning prices, he says, "Science ought to be generous to the poor, inexorable to the rich. In this is the equilibrium of our bad social organization." This last chapter, treating of our social position, our destinies, and our hopes is well worth consideration; and we trust that many a pharmacist will enjoy reading this exhaustive work with as much pleasure as we have experienced in reviewing it.

## EATING, A FINE ART.

PHILOSOPHERS and poets must have often esteemed it something of a degradation that every few hours they should be compelled to bend their intellectual natures and stoop to the sensual process of eating and drinking. And surely any man must have nearly stamped out what there might have been of *spirituellement* in him, before he could be fit to thoroughly enjoy, say, a Lord Mayor's banquet. That the sensual is below the intellectual and the spiritual faculties of man's nature is indisputable. And yet here is matter to startle the believer in the progressive development of humanity. The subject of food and drink, which, not long ago, was beneath the notice of literature or hung to its skirts only in the form of a few dingy old cookery books, has just lately forced itself into the ranks, and besides the possession of writers of volumes, lecturers, and professors, it seems likely soon to present a formidable battalion of periodicals, exclusively devoted to the discussion of the eating powers and opportunities of our race. The *Food Journal* set the ball rolling, and with a staff of able writers it has not yet been reached by any of its successors, either in point of interest or instructiveness. But it must be admitted to have been a horrible idea to start a magazine filled every mouth with articles more or less remotely connected with gormandizing: an idea only one shade less horrible than that of a comic journal—the most mournful excrecence of modern literature. Following the *Food Journal* came the *Milk Journal*, a notion extremely curious, but apparently successful, and which has lately been imitated in Germany by the *Milch Zeitung*. Then a paper came out called the *Knife and Fork*, but whether that still exists we know not. And now

\* "Storia della Farmacia o dei Farmacisti." Par Frederigo Kernot. Napoli.



November brings Vol. I. No. 1 of *Food, Water, and Air*, edited by Dr. Arthur Hill Hassall. Although the editor has won a deserved reputation, especially in this line, we can hardly think he will increase it by this publication. His articles contain nothing new so as to recommend them to scientific readers, nor are they, what we suppose they are intended to be, in any sense popular. In so small a matter as the titles of his articles the editor shows his weakness. For example, what member of the "public" family would, if he could help it, read an article entitled "Dr. Sanderson's Experiments on the Growth of Microzymes in Water."

There is one legitimate subject which we may suggest to these journals, their advocacy of which, if they would take it up with spirit, would do vastly more good to the country than their sensational articles on microscopical impurities and adulterations. It needs neither a teetotaler nor a physician nor a statesman to perceive that the enormous consumption of alcoholic drinks in this country is the most palpable and the most ruinous foe of Britain's manhood and social advance. And others besides brewers and publicans can see that a stringent licensing bill would considerably cripple that mighty foe. The Licensing Bill introduced last session was one of the most masterly efforts of legislation which Mr. Gladstone's Government has prepared. It did not please the licensed victuallers, and we do not want such an Act as would be satisfactory to them. But it failed because the public was not ripe for it. It aroused attention, however, and next session would be far more widely supported than last. We hope to see every section of the public press earnest in its advocacy of such a measure, and in the face of determined public opinion, the vaunted power of the licensed victuallers and the brewing influence would vanish into thin air.

#### HOMŒOPATHY FOR LADIES.\*

DR. RUDDOCK'S manual has well deserved the success which has been accorded to it. He has written in clear language a very useful guide for women in the treatment of those conditions to which they are peculiarly subject, and whether his prescriptions of homœopathic remedies are or are not the best which can be presented, there can be no doubt that his rules for the accessory treatment are based on very careful observation, and comprehend the best maxims of health. It is not by any means our intention to review this work in detail. We have simply to introduce it to our readers as one which for a lady's private use will be esteemed of great value when the lady's views shall also be in accordance with those of the author as to the system of medicine on which it is based.

#### Corner for Students.

CONDUCTED BY RICHARD J. MOSS, F.C.S.

The chemical formulae employed in this section are based upon the new system of atomic weights, unless the use of the older system is specially indicated. In the *British Pharmacopœia* the symbols corresponding to those adopted here are printed in heavy Clarendon type. The new editions of Fownes's *Manual of Chemistry*, and Attfield's *Chemistry: General, Medical, and Pharmaceutical*, supply the data required for calculations, and are recommended as text-books.

#### ANALYTICAL EXERCISE.

This month we shall give another exercise in Qualitative Analysis, and instead of offering a second prize for the best answers to a series of questions, we shall award it to the student whose analysis is second in order of merit. Those who wish to compete should send us their names and addresses before the 20th inst. On the 25th we shall forward samples of a mixture of salts to be examined for all the ordinary metallic radicals.

Students' papers will, as usual, be received up to the 15th of the following month.

\* The "Lady's Manual of Homœopathic Treatment." By E. H. RUDDOCK, M.D. Fourth Edition. London: Jarrold.

#### ANSWERS.

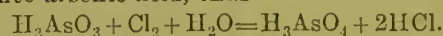
##### First Division.

EXERCISE IN QUALITATIVE ANALYSIS.—The substance given for analysis contained ammonium, zinc, and potassium as chromate, with a trace of iron (triad).

There were twenty-two samples of the mixture, weighing three grammes each, forwarded to different applicants; we received in reply thirteen analyses from the students whose names are arranged in the annexed list in order of merit. The maximum number of marks attainable is 100.

##### Second Division.

I. CHLOROMETRY.—A convenient method for the determination of the available chlorine in chlorinated lime is based upon the fact that chlorine in solution converts arsenious into arsenic acid, thus—

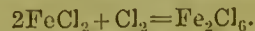


The arsenious solution is made by dissolving a weighed quantity of arsenious anhydride in a definite quantity of sodium carbonate solution, in such a manner that each c.c. of the solution shall contain a known weight of arsenious acid. A weighed quantity of the chlorinated lime to be tested is dissolved in water, and into this solution the standard arsenious solution is poured from a burette, until a drop of the mixture ceases to impart a blue colour to test paper prepared with starch and potassium iodide. When this point is reached, all the available chlorine has been converted into hydrochloric acid, and from the quantity of the arsenious solution required the percentage of chlorine may be readily calculated.

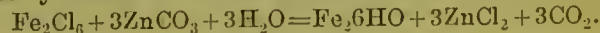
II. QUANTITATIVE ANALYSIS.—The percentage of silica in a sample of commercial salts of tartar may be determined thus:—A weighed quantity of the impure salt is digested in hydrochloric acid, which liberates silicic acid in the form of a gelatinous mass; the mixture is then evaporated to dryness on the water-bath, the residue heated until acid fumes cease to be evolved, then moistened with hydrochloric acid, and treated with hot water. The insoluble portion when collected on a filter, washed, dried, and ignited, may be weighed as silica; and from the weight thus obtained its percentage is easily calculated.

III. POTASSIUM.—When tartaric acid is added to a potassium salt, the acid previously in combination with the potassium is liberated, and an acid solution is produced in which the potassium tartrate is soluble to a considerable extent. But when sodium tartrate is employed, there is no free acid liberated, consequently a much smaller proportion of the potassium tartrate is dissolved, as it is only sparingly soluble in water; and for this reason the latter reagent is to be preferred.

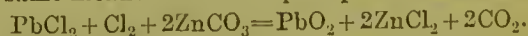
IV. ZINC CHLORIDUM, B.P.—The zinc of commerce frequently contains traces of iron and lead, and it is for the purpose of removing these impurities that chlorine water and zinc carbonate are employed in the preparation of this substance. When the impure zinc is dissolved in dilute hydrochloric acid, the solution is contaminated with ferrous and bad chlorides; by adding chlorine water ferric chloride is produced:—



When zinc carbonate is added the iron is precipitated as ferric hydrate:—



By the same means the lead is precipitated as dioxide:—



V. MAGNESIÆ CARBONAS, B.P.—The theoretical product of the process for the preparation of this substance weighs 3.882 ounces. Disregarding the water of crystallization, the reaction which takes place is as follows:—



As a slight excess of sodium carbonate is ordered, the product must be calculated from the quantity of magnesium sulphate employed; and as the molecular weight of four molecules of this salt, including the combined water, is 984, and the weight of one molecule of magnesium carbonate with its water of crystallization is 382; to find the quantity of the



latter produced by 10 ounces of the former, we have the proportion—

$$984 : 10 = 382 : x \therefore x = 3.882.$$

### PRIZES.

The First Prize for the best analysis of the mixture of salts has been awarded to

THOMAS GRIFFIN, 101, Western-road, Brighton.

The Second Prize for the best answers to the questions published in our September number has been awarded to

M. C. ATKINSON, 225, Oxford-street, Manchester.

### Marks awarded for Answers.

#### First Division.

	Total.
T. Griffin (1st prize) .. .. .	95
F. W. Fletcher .. .. .	92
C. St. Clair .. .. .	90
J. Spencer .. .. .	82
H. C. Webb .. .. .	80
Crenset .. .. .	78
B. P. .. .. .	70
Graham .. .. .	65
Alpha .. .. .	60
Scotchman .. .. .	55
Chemicus .. .. .	52
W. Laugher .. .. .	50
J. H. Watson .. .. .	20

#### Second Division.

	I.	II.	III.	IV.	V.	E.	Total.
M. C. Atkinson (2nd prize) .. .. .	6	7	5	6	4	3	31
Excelsior .. .. .	6	6	5	6	4	3	30
J. H. Mathew .. .. .	5	5	5	6	4	3	28
Nil Desperandum .. .. .	5	5	5	5	4	2	26
J. Walker .. .. .	5	4	5	4	4	3	25
N. W. H. .. .. .	5	6	5	5	0	2	23
J. M. J. .. .. .	5	4	3	4	4	2	22
Aurum .. .. .	4	3	5	2	4	2	20
J. R. .. .. .	0	5	5	6	0	2	18
A. H. .. .. .	5	5	0	0	4	2	16
H. B. .. .. .	5	1	5	2	0	2	15
A Beginner .. .. .	0	0	5	3	4	2	14

### TO CORRESPONDENTS.

\*. All Communications should include the names and addresses of the writers; those which reach us after the fifteenth day of the month succeeding that in which the questions appear will be disregarded.

Prizes.—The students to whom prizes are awarded are requested to write at once to the publisher naming the book they select, and stating how they wish it forwarded.

T. St. Clair.—The substance was not perfectly soluble in water. J. Spencer.—The green colouration which you attributed to manganese was due to chromium; there must have been a trace of chromium in the filtrate D. You should have tried if the green substance dissolved in water, yielding a solution which turned red on adding acetic acid, as it should have done if manganese was present. The account of your analysis might readily be condensed into one quarter of the space.

H. C. Webb.—We are surprised at the result of your test for ammonium; however, it is not a good one. A very good plan is to mix a grain or two of the solid with a few grains of calcium hydrate in a small beaker, then add enough water to make the mixture into a thick paste, and immediately cover the beaker with a piece of glass, to the lower side of which adheres a piece of moistened turmeric or red litmus paper; the former will turn brown and the latter blue if the ammonia is present. If the quantity is not very small, it may be recognised by its peculiar odour. Warming the beaker makes the test more delicate.

B. P.—The colour of the substance and the preliminary examination should have demonstrated the presence of a chromate. If you observed the faintness of the colouration produced by potassium ferrocyanide, it should have suggested that the quantity of iron present was quite too small to give such a decided reaction with the borax bead; besides, you should have observed the colour of the bead after exposure to the outer flame (which in the case of iron would be yellow) before exposing it to the inner flame, where chromium yields an emerald green, and iron a sottle green bead.

Alpha.—You do not appear to have subjected the substance to any preliminary examination, such as heating the substance on charcoal and in a bead of borax in the blowpipe flame. We recommend you to adopt the plan of recording your analysis in the form of a table. See remarks to J. H. Watson.

Chemicus.—It is strange that you failed to observe the very marked flame colouration in the preliminary examination, and that you should afterwards have concluded that sodium was present. The only way we can account for your having failed to detect zinc is by assuming that you did not add an excess of ammonia before filtering the solution which you examined for zinc.

J. H. Watson.—The red fumes were doubtless due to the decomposition of the nitric acid; there was no iodine in the mixture; this element is not usually called a metal. The text-book of chemical analysis which we find most satisfactory is "Galloway's Qualitative Analysis;" but for a pharmaceutical student we know of no more suitable work than "Attfield's Chemistry." Opposite page 236 you will find a table which you may take as a model of the way we wish to get the account of your analysis. A sheet of paper the size of two pages of this journal is quite

large enough for the tabulation of your operations and results. If you practice analysis on mixtures of your own preparation, you will find out when errors creep in, and how they are to be avoided.

H. Dana.—In testing for phosphoric acid the quantity of the fluid to be tested should be about equal in volume to the ammonium molybdate solution to which it is added, and it should not contain much hydrochloric acid. It is well to warm the liquid, but only slightly. If the quantity of phosphoric acid present is small, the precipitate may not appear for a few hours. We got a distinct reaction with the potassium sulphocyanide; the colour is best seen by holding the test-tube over a sheet of white paper and looking down through it.

Aurum.—It is not advisable to heat the residue to redness, as at that temperature alkaline silicates would be reproduced. IV. Formula for ferrous chloride incorrect; the iron is not precipitated as oxide.

J. R.—I. You appear to have misunderstood the question.

A. H.—III. Potassium and sodium tartrate (Rochelle salt) which you say is precipitated, is very soluble in water, as you are doubtless aware.

H. B.—IV. It is a great mistake to suppose that the iron would exist in the hydrochloric acid solution as oxide, of course it would be in the state of chloride.

Beginner.—II. The alkaline carbonates are not decomposed by ignition. N. B.—It must be distinctly understood that we cannot forward samples of the mixture for analysis to any applicant whose request shall reach us after the 20th inst.

### Books offered as First Prizes.

- Attfield's *Chemistry: General, Medical, and Pharmaceutical.* (Van Voorst.)  
 Balfour's *Manual of Botany.* (Black.)  
 Brooke's *Elements of Natural Philosophy.* (Churchill.)  
 Conington's *Handbook of Chemical Analysis;* with Tables of Qualitative Analysis adapted to the same. (Longmans.)  
 Eliot and Storer's *Manual of Inorganic Chemistry.* (Van Voorst.)  
 Fownes's *Manual of Elementary Chemistry.* (Churchill.)  
 Fresenius's *Qualitative Analysis.* (Churchill.)  
 Galloway's *Qualitative Analysis.* (Churchill.)  
 Galloway's *Second Step in Chemistry.* (Churchill.)  
 Ganot and Atkinson's *Elementary Treatise on Physics.* (Longmans.)  
 Garrod's *Materia Medica;* with Modern Chemical Notation. (Walton.)  
 Noad's *Chemical Analysis, Qualitative and Quantitative.* (Reeve.)  
 Northcote and Church's *Qualitative Analysis.* (Van Voorst.)  
 Odling's *Outlines of Chemistry.* (Longmans.)  
 Royle and Headland's *Materia Medica.* (Churchill.)  
 Williamson's *Chemistry for Students.* (Clarendon Press.)  
 Barff's *Introduction to Scientific Chemistry.* (Groombridge.)

[Any scientific book that is published at a price not greatly exceeding half-a-guinea may be taken as a first prize.] See list on another page.

### Books offered as Second Prizes.

- Balfour's *Elements of Botany.* (Black.)  
 Bloxam's *Laboratory Teaching.* (Churchill.)  
 Church's *Guide for Students in Agricultural Chemistry.* (Van Voorst.)  
 Galloway's *First Step in Chemistry.* (Churchill.)  
 Gill's *Chemistry for Schools.* (Walton.)  
 Hofmann's *Introduction to Modern Chemistry.* (Walton.)  
 Huxley's *Lessons in Elementary Physiology.* (Macmillan.)  
 Oliver's *Lessons in Elementary Botany.* (Macmillan.)  
 Orme's *Introduction to the Science of Heat.* (Groombridge.)  
 Potts's *Elements of Euclid.* School Edition. (Longmans.)  
 Roscoe's *Lessons in Elementary Chemistry.* (Macmillan.)  
 Wormell's *Elementary Course of Mechanics.* (Groombridge.)  
 Wurtz's *History of Chemical Theory.* Translated by Watts. (Macmillan.)

[Any scientific book which is sold for about five shillings may be taken as a second prize.] See list on another page.



S. F.—We cannot recommend a better work on chemistry for a pharmaceutical student than that of Dr. Attfield, published by Van Voorst.

J. A. W.—The second volume of the "Year Book of Pharmacy" has not yet been published. We believe its appearance was fixed for October, and we are not aware why it has been delayed. We observe that it is now announced to be ready by the end of November.

Sigma (Wolverhampton).—In February, 1868, we published analyses, by Mr. Henry Matthews, of the most popular Hair Restorers, showing that all contained more or less lead. Such as Erasmus Wilson's or Dr. Locock's Lotion, the recipes for which will be found in any druggist's receipt book, are good stimulating lotions, but for darkening the hair, a lotion containing lead must be used. If made and used with caution there is no great danger. Any reader will oblige "Sigma" who will give a good formula for a hair restorer.

A registered chemist and druggist, Edinburgh, writes to us that placards of certain vermin destroyers "sold here" are to be seen in a grocer's window. This is certainly contrary to the Pharmacy Act, and all such cases should be reported to the Registrar 17 Bloomsbury-square, London.



I should be glad to know the opinion of some of your readers about dispensing the following:—

R Spt. Ammon. Co., 5ss.  
Liq. Ammon. Acet., 5ij.  
Quinæ Sulph., gr. x.  
Liq. Morph., 5j.  
Spt. Ether. Nit., 5jss.  
Acid. Citric, 5j.  
Potass. Bicarb., 5jss.  
Mist. Camph., 5ij.  
Inf. Gentian ad 5vj.

M. ft. Mist. Sumat 5j. tertia vel 4tis horis.

E. G.

Mr. W. Thomas (*Builth*).—The following applications for boot-tops (white and brown) are copied from *Cooley*. Perhaps some reader can furnish a better recipe:—

#### BOOT-TOP LIQUIDS.

##### For White Tops.

Oxalic acid and white vitriol, of each one ounce; water, one-and-a-half pint. First clean the leather, then apply with a sponge; after a short time wash again with water, and dry in a current of air; polishing with a brush if desirable.

2. Sour milk, one quart; butter of antimony, cream tartar, tartaric acid, and burnt alum, of each two ounces.

3. Alum, cream tartar, magnesia, oxalic acid, of each one ounce; salt of sorrel, sugar of lead, of each quarter of an ounce; water, one quart.

##### For Brown Tops.

Alum, annatto, oxalic acid, of each one ounce; isinglass, sugar of lead, of each half an ounce; salt of sorrel, quarter of an ounce; water, one quart. Boil for ten minutes.



THE report of the first six months' sale of post cards shows that 58,485,960 were sold in that period.

Mr. Phillips, chemist, Crewe, has removed to Wigan. He is succeeded at Crewe by Messrs. Henderson and Co.

Mr. Waterworth has taken the business of the late Mark Rainton, of Scarborough.

Mr. William Wootton, pharmaceutical chemist, of Wolverhampton, died on October 30th, aged 44.

Mr. E. G. Harwood, chemist and druggist, of Bolton, has been elected a member of the local Town Council as representative of the Exchange Ward.

Another new medical journal has appeared, entitled the *London Medical Journal*. It appears to be an organ of the Female Medical Society.

Mr. Vincent Jackson (formerly of West Hartlepool) has opened a business at North Ormesby, Middlesborough, Yorkshire.

Mr. Norman, chemist, of Warwick, who disposed of his business there about six years ago, has returned to his old shop again, which has been conducted since by Mr. Williams.

Dr. W. B. Carpenter is credited with the authorship of an article in the *Quarterly Review* in which Mr. Crookes, F.R.S., and his recent investigations into "Psychic Force" are rather severely dealt with.

Mr. J. Whalley, manufacturing chemist, of Mill-street, Manchester, unsuccessfully contested the municipal representation of New Cross Ward in that city, being only in a very small minority.

Mr. E. Holt, wholesale druggist and drysalter, Cornbrook-terrace, Chester-road, Manchester, has been elected by a large majority as the municipal representative of the St. James's Ward, in that city.

Mr. John G. Dale, F.C.S., of the firm of Roberts, Dale, and Co., chemical manufacturers, of Warrington, died on October 16th from phthisis. Mr. Dale was a member of the town council of Warrington. His age was only 31.

Mr. R. Hampson has removed from Manchester to London. He has taken the business of Mr. J. Balmer, 205, St. John Street-road. The Chemists' Association of Manchester expressed very deep regret at his departure from their midst.

Dr. Ruddock, the editor of the *Homœopathic World*, announces that with the end of the current year he shall cease to fill that office. He trusts some professional brother will in the meantime volunteer his services, so that the publication may be uninterruptedly continued.

A new hospital has recently been opened at Dudley. The cost of the building and the land upon which it stands is upwards of £30,000, the gift of the Earl Dudley. The institution is also endowed with a donation of £20,000 left for that purpose by the late Mr. Joseph Guest, of Dudley.

Death has also lately carried away an old and very much esteemed and respected chemist—Mr. Fowke, of the firm of Fowke and Son, Stafford. He had been in business many years in Rugeley. He was a kind and amiable man, and will be long remembered in the neighbourhood.

Professor Christison, of Edinburgh, has been made a baronet. This recognition of his eminent therapeutic services comes with especial grace from Mr. Gladstone, at whose recommendation the honour is conferred, as the professor is a decided Tory, and a staunch opponent of the present Premier.

The land is now being rapidly cleared for the erection of the working men's block for the extension of the Birmingham Queen's Hospital. The foundation-stone will be laid with masonic honours by Lord Leigh, the Provincial Grand Master of Warwickshire, on the 4th of December. Her Majesty has subscribed one hundred guineas in aid of the object.

An inquest has been held at Oxford on the body of Miss Florence Matilda Pike, who was poisoned by taking an overdose of chlorodyne. The deceased, who was 23 years of age, had been accustomed to take chlorodyne to relieve pains she suffered in her side. Medical evidence showed that she took one dose after another before the effects of the first had passed off.

From Australia is announced the death of Mr. Lewis Badham, of Torre, Torquay. A few years ago he succeeded to the business formerly carried on there by Mr. Mureh. He was an invalid the greater portion of that time, and was ordered by his medical adviser to take a voyage to Australia. It proved too much for him, and he died almost immediately on his arrival there.

On the 25th of October a very large fire occurred in Hull, which resulted in the destruction of four business establishments, among them being the premises of Messrs. Lofthouse and Saltmer, druggists. The spread of the conflagration was largely due to the fact that for some considerable time no supply of water could be obtained to arrest it, as the supply had been turned off in consequence of some works which were being executed in another part of the town.

Mr. Whitby's new and extensive premises in Worship-street, Finsbury, to which locality we announced last month he had removed, are excellently adapted to his business as a perfumer. In his energetic hands the well-won reputation of R. B. Ede and Co. and their specialities is more than maintained. Mr. Whitby will be glad to see the reader of this paragraph in his new show-room, and buyers for export will do well to give him a call.

We regret to announce the sudden death of Mr. Walter Lacy, chemist, of Highbury Park, Kingsdown, Bristol, on the 29th ult. The deceased had not been in robust health for some time, and it is supposed must have sustained some internal injury while assisting his wife (who was an invalid) upstairs. At all events, during the night of Thursday the 26th bleeding in the lungs set in, he never rallied, and died on Sunday morning, at the age of 30. He was much respected by all who knew him, and leaves a wife and two children.



**BANKRUPTCY.**—A meeting of the creditors of William Collinson, chemist and druggist, Masborough, was held at the Sheffield County Court on the 2nd inst. Mr. Hoyle and Messrs. Potter and Brown appeared on behalf of the principal creditors, and Mr. Mellon for the petitioning creditor. Bankrupt's liabilities were stated to be £600, and his assets £100. Mr. W. F. Tasker, accountant, Sheffield, was appointed trustee. The bankrupt is in Wakefield prison, having been committed, it will be remembered, on the charge of murder.

An association consisting of chemists' assistants and apprentices has just been formed in Northampton, the object of the new combination being the mutual improvement of the pharmaceutical knowledge of its members. Meetings have been held in the matter, and Mr. Masters has been appointed president, Mr. Tigar, secretary and treasurer, and a committee consisting of Messrs. Stedman, Duncie, and Cross has been formed for the purpose of carrying out the objects of the association. The committee has been requested to prepare a code of rules for the government of the society, and arrangements are to be made for the organization of a class for the purposes of study.

A correspondent of the *Tobacco Trade Review*, writing with respect to the injuries suffered by that branch of trade, in consequence of cigars and tobacco being so largely vended by the retail tradesmen in other branches of commerce, alleges that chemists sell cigars to some considerable extent, thus setting a bad example, and acting indiscreetly. The correspondent in question further says, "although the chemist sells flagrant Havanas and Manilas, the tobacco-nist does not retaliate by offering drugs to his customers," which we can very easily understand. An ordinary tobacco-nist is not much acquainted with the mysteries of pharmacy, and if he devoted himself to the sale of drugs, some curious results would undoubtedly ensue.

A complaint of the quality of the cod-liver oil supplied to the Waterford guardians having been made, the representative of the firm of Messrs. Hunt and Co., Dublin, the contractors, attended a recent meeting of the guardians to make an explanation relative to the matter. He said the contractors had purchased the oil from one of the most eminent manufacturers in Belgium, who supplied all the medical houses in Dublin with the article, and he was unable to conceive how it could be of bad quality. The oil complained of was part of the last consignment received, and the only difference he could detect between the sample and stock was a slight paleness in the colour. He could only account for this paleness by supposing that the oil, through mistake, had been put into a damp jar, a thing very rarely occurring. The board considered the explanation satisfactory.

#### TYNESIDE CHEMISTS' ASSISTANTS' ASSOCIATION.

It has long been thought singular that a large and influential metropolitan town like Newcastle-on-Tyne, numbering within its limits probably a hundred chemists and druggists, should not have hitherto established any Chemists' or Chemists' Assistants' Association.

With a view to remedy this deficiency, a meeting of druggists' assistants and apprentices was convened on the 5th of September, and about thirty-five persons responded to the call. It was then agreed that an association should be formed, under the title of the Tyneside Chemists' Assistants' Association. A few of the more active abettors of the scheme had previously prepared a draft of rules for the government of the Society. These were read and passed, and the following officers were elected:—

*President.*—Mr. Shaw. *Vice-President.*—Mr. Simpson.

*Secretary and Treasurer.*—Mr. Alfred Brady.

*Committee.*—Messrs. Welch, Marshall, Melhuish, and Bullus.

The inaugural meeting of the Association was held on Thursday evening, September 21st, in the Museum of the Natural History Society.

The *PRESIDENT*, in commencing his address, stated that in coming to Newcastle a few months ago, a perfect stranger to the locality, he had regretted that there was no place in the town, to which he in common with his brethren of the trade could resort, for the purpose of social intercourse, and interchange of sentiment on matters connected with their

calling; the hint, he continued, was taken up by a few who had similar views, and the hope entertained that such meetings, periodically held, would form not only pleasant social re-unions, but also, that opportunities would then be afforded for practical improvement, and that whether in the capacity of assistant or apprentice, a bond of unity for mental improvement and encouragement might be cemented to their own great advantage, the satisfaction of their employers, and the manifest good of the public at large. The special business of the Society's meetings would be the reading of papers on subjects connected with pharmacy and the promoting of free discussion thereon; believing that such interchange of opinion would tend materially to help the younger members in preparing for the necessary Pharmaceutical Examinations. A room has been taken for the meetings of the Association, which will be open to members every evening except Saturday and Sunday; hither they may resort to spend a quiet hour in reading or study, and here the ordinary meetings of the Society will be fortnightly held. It is intended, so soon as funds will permit, to commence a library and museum—already a valuable collection of specimens of *Materia Medica* has been kindly presented to us by Messrs. Southall, Son and Dymond, of Birmingham. We indulge the hope that this liberal contribution may lead our neighbours to lend a helping hand in an undertaking which cannot fail to commend itself to the good feeling of the community.

The *SECRETARY*, in a few cursory remarks stated that it was proposed to place on their tables some of the periodical publications more immediately connected with chemical, pharmaceutical, and medical science for the perusal of their members, and concluded by assuring the younger members of the Association that the earnest desire of the committee was to render them every aid that their position would admit.

A medical friend was present at this meeting, and dropped a few words of encouragement to those who had but newly entered on their career, urging them to meet courageously the little difficulties which must needs arise in their elementary training, and assuring them that after having by close study surmounted these, their future course would be comparatively easy and pleasant.

On this occasion, the *SECRETARY* read a paper on "Alchemy, the Cradle of Chemistry," which was listened to with attention and interest.

The number of members already enrolled is upwards of fifty.

Since this meeting, four others have been held, the subjects treated being:—"Senna" (Mr. Melhuish); "Tobacco" (Mr. Anderson); "Cell-formation" (Mr. Heslop); "Opium" (Mr. Shaw).

The Association has also received the following donations. One guinea from Messrs. Smith and Co., High-street, Borough, London. A five guinea *Materia Medica* cabinet from Messrs. Evans, Sons, and Co., of Liverpool, and a medico-botanical map and set of 900 labels from Mr. Barber, of Liverpool.

#### DEATH FROM A COLD.

An inquest was held at Weymouth, on November 4th, on the body of a fine little boy named Frank Guy, of Weston Terrace, Weymouth, who died suddenly under the following circumstances. He was nine years old. He was taken with a cold on Monday morning, and on Friday, the cold being worse, his mother went to Mr. Williams's, and described to him how the little boy seemed, and that he had a tightness on his chest, and Mr. Williams prescribed a powder and a mixture. When she came back, he had more difficulty in breathing, she gave him the powder, and took him in her arms, and he seemed to be convulsed. She sent for Dr. Nathan, who came immediately.

The medicine was produced, and the label directed a dessert-spoonful every four hours, and the powder at bedtime, but the mother gave the powder immediately, before the mixture. About an hour after she gave the powder, the father gave a dessert-spoonful of the mixture, and deceased took it without difficulty. Not five minutes after it was taken, there was a change. Deceased jumped clean out of witness's lap, and called for his mother. He immediately became convulsed, and his eyes fixed. Deceased remained convulsed from twenty minutes to half-an-hour, and died



immediately after Mr. Nathan came. Neither powder nor mixture operated on the bowels.

Samuel Stedman was assistant to Mr. Williams. Last evening, he had just finished his tea, when he came out, and saw Mrs. Guy in the shop, talking to Mr. Williams. The latter called him and said, "I have written something in the book; will you please to make it up?" Witness did so. The medicine was a mixture and powders, which witness made up according to Mr. Williams's order; and directed it. There was one grain of calomel with a little sugar to increase the bulk. The mixture was—bi-carbonate of potash, 1 drachm; ipecacuanha wine, 2 drachms; spirits of nitre, 2 drachms; tincture of squills,  $1\frac{1}{2}$  drachm; chlorodyne, 1 drachm; water to make 4 ounces. The bottle produced was the one he gave. A table-spoonful or more was gone from the bottle, but a little excess would not be deleterious. There was nothing deleterious but the chlorodyne, and he would be willing to take the whole at once now, though it would be a large dose. He used a drop measure for the chlorodyne, and measured it accurately. Witness had had fourteen years' experience in dispensing medicine, and served his four or five years before that. He had been six months with Mr. Williams, during which time he had dispensed about 3,000 new prescriptions, besides dispensing for the Infirmary.

The Coroner remarked that this did not speak much for the health of Weymouth. He should think 3,000 a larger number than was made up by any other druggist in the county.—Mr. Stedman: Put it down to visitors, Sir.—Dr. Nathan said he found the boy in his father's lap, to all appearances dead. The pulsation of the wrist and the action of the heart had ceased; but deceased made one gasp. On examining the body found the pupil of the eye much dilated, and on making inquiries found the boy had been complaining for some days of difficulty of breathing, etc., as Mrs. Guy had said. Saw the medicine and examined it, and had no doubt its component parts were as described, and did not consider that the medicine had any pernicious tendency, or accelerated death in any way. Considered death was caused by congestion of the lungs, and probably a spasm of the glottis, brought on by exposure to the cold and over-exertion. Verdict: "Died from natural causes."

### LAW AND POLICE.

#### ALLEGED NEGLIGENCE OF A RAILWAY COMPANY IN THE CARRIAGE OF ESSENCE OF LEMON.

At the County Court, Dudley, on the 21st ult., an action was brought by Mr. Cooper, drysalter, of Upper High-street, Dudley, to recover £8 18s. 9d., the amount of loss sustained through the alleged negligence of the Great Western Railway Company, in the conveyance of a copper dupper, which contained essence of lemon. Mr. Joseph Stokes appeared for the plaintiff, and Mr. Bentley for the defendants. The plaintiff's case was that the "duffer," a vessel similar in shape to a carboy, was packed in a strong box, in the safest possible manner, and forwarded from the warehouse of Messrs. Monk and Company, wholesale drysalters, of London. Before its arrival at Mr. Cooper's it was found to be leaking, and there was a deficiency in weight to the value of the amount now claimed. It was stated in cross-examination that the box in which the dufer was packed presented no appearance of having met with violence or rough usage. Mr. Bentley contended that there was no evidence to prove that the box received injury in transit, and the fair inference was that there must have been some defect in the copper by means of which the contents escaped. His Honour, in delivering judgment, said that the company took upon themselves the duty of common carriers in respect to the box, and their duty was to take ordinary and reasonable care of it in the course of transit, and to deliver it in good condition to the consignee at the end of the journey. This they were bound to do; but there must be shown to have been negligence or carelessness in the treatment of the package before the railway company were liable to the plaintiff. In the present case there was no evidence to prove neglect in treating the box while under the company's charge, and his judgment would be for the defendants. Plaintiff, however, would have his remedy against Messrs. Monk and Company, in London.

#### SHOCKING SUICIDE OF A CHEMIST.

On the morning of the 28th of October, Mr. Corbett Smith, a well-known chemist and druggist, of High-street, Bromsgrove, was found dead in bed by his housekeeper, who, finding that he did not come down as usual to open his shop, went into her master's room to ascertain the cause. An inquest was held upon the body the same afternoon, when, from the evidence, it appeared that deceased, a bachelor, aged 41 years, and well known as a man of a jovial and easy temper, had been drinking rather of late. On Friday he was more than usually excited, and rather unsettled in his mind and manner, and when he returned home, after spending the evening out, about twelve o'clock, he was not sober. He was not seen alive after that time, and when found in the morning had evidently been dead some hours. On the table in his sitting-room was found an ounce bottle half full of prussic acid, and by his bedside, on a chair, was a medicine glass, which had contained some liquid. Underneath the candlestick was a paper, upon which was written in pencil, in deceased's handwriting, "From this world of long suffering and trouble I now make my exit. Friends, farewell!" There were also some vague expressions. The light was put out, all the room was in perfect order, and deceased was lying with his hands folded upon his breast, as though in a deep, calm sleep. After hearing the evidence of Dr. Prosser and the other testimony, the jury returned a verdict that "deceased committed suicide, by taking prussic acid, whilst in a state of temporary insanity."

#### A CHEMIST OUT OF HIS PLACE.

On October the 28th the Coroner for East Middlesex held an inquiry respecting the death of Mary Elizabeth Pope, aged 43, of 9, Susannah-row, Curtain-road. William Pope said: Deceased was my wife. Last Sunday, October 22, she was in her usual health, but got ill towards night, and gradually worse until Wednesday, when I went to Mr. Morris, a chemist in Virginia-row, and he came and saw deceased and gave her medicine. He charged me 3s., and promised to continue his visits for 3s. a week, saying that my wife was suffering from a severe attack of erysipelas. On Thursday morning I woke up at 6.30, and found her dead in bed. She had had four doses of the physic. I went to Mr. Morris for a certificate, thinking he was a regular doctor, and he called in a doctor named Lilley, who refused to give a certificate.—George Toulser said: I live in the same house as the last witness, and recommended him to go to Mr. Morris, because he had done me good. He attended a child of mine who died, and I had a certificate from him. I do not know who signed it. I believe the last witness treated the deceased kindly.—Mr. George D. Phillips, divisional surgeon of police, deposed: By order of the coroner, I have made a post-mortem examination of the deceased. The body was exceedingly well nourished and fatty. The lungs were the seat of extensive inflammation, and it extended to the heart, and such inflammation was the cause of death. There was not the slightest trace of erysipelas, and if Morris treated the deceased for that disease he made a grave mistake. But as he was not called in until the Wednesday, it would have been impossible for him or anyone else to have saved her, the inflammation having obtained too firm a hold, and having regard to the fact that the house is in a shocking state of dilapidation, there not being a sound square of glass in the place.—The Coroner, in summing up, said: All I can say is, that the Government ought to step in and stop the pernicious practice which exists whereby duly qualified doctors are cheated out of their fees; for if a chemist visits a patient and receives a fee he is liable to a fine of £20. A chemist is a very useful man in the sphere in which the Government directs he should move, but the law should be enforced in all cases where he oversteps the prescribed limit.—A verdict was returned in accordance with the medical evidence.

#### SHARP V. GABRIEL AND ANOTHER.

On the 3rd of November, in the Court of Queen's Bench, Mr. Chas. Russell, for the defendants, moved for a rule for a nonsuit pursuant to leave reserved by the learned judge (Mr. Justice Lush) who tried the case. This was an action which had been brought to recover damages for alleged negligence on the part of one of the defendants in extracting one of the plaintiff's teeth. The plaintiff's case



was that the operation had been performed so unskilfully that his jaw-bone was cracked, and a part of it became so diseased that it became necessary to remove the injured portions. The jury returned a verdict for the plaintiff, damages £100. It was proved at the trial that a properly-qualified dentist had extracted the tooth, and that the best instrument was used, and it was alleged that the injury complained of arose from disease which was not traceable to the operation in question. It appeared that no claim had been made on the defendants by the plaintiff for seventeen months after the alleged cause of action arose. Rule nisi granted.

#### A BANKRUPTCY FRAUD.

John Brierley, chemist, Frodsham, who had been on bail was charged with a violation of the Bankruptcy Act, 1869, by fraudulently removing portions of his property, of the value of £20, on September 13th. The prisoner filed a petition for liquidation, and the creditors subsequently agreed to a composition of 2s 6d in the pound, which the prisoner was to pay in instalments to the trustee. The instalments were regularly paid up to the above date, when the prisoner removed a hamper and a box containing part of his stock-in-trade to Sutton Weaver station, and was detected by the attorney in the bankruptcy and the attorney for a gentleman to whom the prisoner had given a bill of sale on his fixtures. A legal question was raised, but the result was unfavourable to the prisoner, who was found guilty, and sentenced to three months.

#### A CHANCE FOR CHEMISTS.

Thomas Tully is wanted, and fame awaits him at the Guildhall if he will come forward. He is said to have left London on the 13th of last month encumbered with other people's securities to the value of £15,000. But Thomas Tully is modest, and, like Cincinnatus and Washington and other great men, prefers the simple pleasures of a retired life to the rewards which a great city would gladly confer on him. It is possible that some chemist in some remote part of Great Britain or perhaps America, after reading this, may recognise Thomas Tully by being asked to compound the following prescription, which is for a medicine that he frequently takes:—

R. Ammon. Carb., gr. xx.  
Potass. Bicarb., gr. xl.  
Sp. Chloroformi, ʒj.  
Inf. Gent. Conc., ʒij.  
Aq. ad ʒij. M.

Cap. coch., ampl. pro re nata ex aqua.

Tully himself is thus described:—About 48 years of age, 5 feet 8 or 9 inches high, dark brown hair (turning grey), whiskers, beard, and moustache (iron grey) cut close; small piercing greyish eyes, rather pale complexion, face flushes when excited, erect figure, square shoulders; speaks in a subdued tone of voice, with American accent; native of Ireland.

A reward of £250 is offered for information which shall lead to his apprehension, and a further £1,000, or proportionate part of the same, on the recovery of the property, or some of it. Information to be addressed to Inspector Bailey, City of London Police, Detective Department, 26, Old Jewry, London, E.C.

#### A CHEMIST SLANDERED BY A GROCER.

The case of Shellcross v. Buxton was tried in the Salford Hundred Court of Record recently, the plaintiff being Mr. George Shelleross, chemist and druggist, of Bolton, and the defendant Mr. D. Buxton, grocer, of the same town. The action was brought to recover damages for certain slanderous and defamatory words used by the defendant with respect to the plaintiff, by reason of which the latter had sustained damage and suffered commercially in his business. Some time ago the defendant believed that he had a claim against the plaintiff for 8s. 2d., the precise nature of which he could not clearly define. Some unpleasantness arose in connexion with this claim, which the plaintiff refused to acknowledge, and the defendant took out a county-court summons. The case was tried in the Bolton court, when judgment was given for the then defendant, Mr. Shelleross, without his being called upon for a statement in defence. The defendant (Buxton) under these circumstances went to the shop of the plaintiff, and in the

presence of several people asked for the 8s. 2d., which he alleged was due to him, and out of which the contention arose. The plaintiff very naturally refused to pay, whereupon the defendant indulged in some unjustifiable slanderous language, calling the plaintiff a quack, and describing him as utterly incompetent to manage his business. He further stated that Mr. Shelleross had frequently had county court summonses; that he was well known to Judge Green (the judge of the Bolton County Court, and that the bailiffs had often been in his house. The plaintiff, in view of these defamatory allegations, sought to recover damages for the discredit done to him and his business capacities. When the case was opened, the Recorder suggested that the litigants should endeavour to compromise the matter; and after a consultation by the counsel, Mr. Torr, on behalf of the defendant, apologised for the language used by his client. A verdict was entered for the plaintiff by consent for 40s.

### GAZETTE.

#### BANKRUPTS.

COLLINSON, WILLIAM, Masborough Bridge, Rotherham, chemist.  
JONES, ELIZABETH, Wellington-road, Rhyl, late, chemist.  
ROBINSON, WILLIAM, Scarborough, chemist.  
SEYMOUR, A. W., Montpellier-road, Brighton, doctor of medicine.  
VERDON, HENRY, Presteign, Radnorshire, chemist.

#### DECLARATION OF DIVIDENDS.

ANN BEECH and JOSEPH BEECH, Atherstone, Warwickshire, druggists, first div. of 8d., any Thursday, at Mr. Kinnear's, Waterloo Rooms, Birmingham.  
JOHN JOSHUA CARRIER, Suffolk-street, Cambridge road, Mile-end, manufacturing chemist, first div. of 20s., Wednesday next and three subsequent Wednesdays, at Mr. Paget's, 22, Basinghall-street, City.  
EDWIN MACKIE GIBBS, White's-row, Whitechapel-road, manufacturing chemist, first and final div. of 9d., any Wednesday, at Mr. Bank's, 25, Coleman-street, City.  
SAMUEL FOWLER UNDERHAY, late of Sixpenny, Handley, Dorsetshire, surgeon, second div. of 1s. 3d., on Wednesday next and three subsequent Wednesdays, at Mr. Paget's, 22, Basinghall-street, City.  
THOMAS WALL and THOMAS JOHNSON, Stratford-upon-Avon, Warwickshire, druggists, second div. of 1d. any Thursday, at Mr. Kinnear's Waterloo Rooms, Birmingham.  
THOMAS WALL and THOMAS JOHNSON, Stratford-upon-Avon, Warwickshire, druggists (separate estate of Thomas Johnson), second div. of 1s. 3d., any Thursday, at Mr. Kinnear's, Waterloo Rooms, Birmingham.  
CHARLES EDWARD ELLIOT WELCHMAN, Lichfield, surgeon, second div. of 2s. 6d., any Thursday, at Mr. Kinnear's, Waterloo Rooms, Birmingham.

#### PARTNERSHIPS DISSOLVED

ADAMS, C. A., and ADAMS, C., Phillip's-street, Aston New Town, Warwickshire, soda-water manufacturers.  
BATTY T., and BATTY, J., Kingston-upon-Hull, wholesale druggists.  
BENNETT, JOSEPH, and LUCAS, HENRY, New Mills, Derbyshire, manufacturing chemists.  
CHURCH, T., sen., and CHURCH, T., jun., Queen Anne-street, Bristol, crucible manufacturers.  
EVERITT, R. J., and GARTH, ARTHUR, West Ham, Essex, manufacturing chemists.  
GARDNER, JOHN, and WARMAN, WILLIAM A., Mare-street, Hackney, chemists and druggists.  
GREER, GARD, ROUSE, E. C. R., Brighton, surgeons.  
JACKSON, JABEZ, and PAULI, JOSIAH, Birmingham, surgeons.  
JONES, W. T., and STANLEY, R. S., Southwell, Notts, druggists.  
LAMBERT, N. G., and GORTON, S., Hartley, Northumberland, bottle manufacturers.  
MOORE, B., and PINNIER, C., Chippenham, annatto manufacturers.  
RHODES, G. S., and RHIND, J., Dewsbury, surgeons.  
TURNER, MARIA FRANCES, TURNER, HENRY, and HARRY, ROBERT, Piccadilly, Manchester, homœopathic chemists, so far as regards M. F. Turner.  
WICKHAM, J., M.D., and ROBERTSON, J. D., M.D., Penrith, surgeons.



[The following list has been compiled expressly for the CHEMIST AND DRUGGIST, by L. de Fontaineau, Patent Agent, 4, South-street, Finsbury, London; 10, Rue de la Fidélité, Paris; and 33, Rue des Minimes, Brussels.]

Provisional Protection for six months has been granted for the following:—

2169. W. Weldon, of Putney, Surrey. Improvements having for object the recovery of the sulphur employed in the manufacture of soda and potash. Dated 18th August, 1871.



2170. W. Weldon, of Putney, Surrey. An improved method of manufacturing chlorine. Dated 18th August, 1871.
2231. T. J. Smith, of London. An improved process for producing ammonia. Dated 25th August, 1871.
2260. L. A. E. P. de la Peyrouse, of Paris. Improvements in the treatment of fatty matters and new applications of fatty matters so treated. Dated 28th August, 1871.
2516. F. Claudet, of Coleman-street. Improvements in treating solutions obtained from burnt cupreous pyrites. Dated 23rd September, 1871.
2594. L. Blaise, of St. James's-street. Improvements in urinometers, saccharometers, ale-hometers, and other measures of density of fluids or liquids. Dated 2nd October, 1871.
2608. C. L. H. Moosh, of Egremont, Chester. An improved combined bed-chair and commode with or without a table for invalids. Dated 3rd October, 1871.
2620. D. Jones, of Clerkenwell. Improvements in apparatus for generating vapours for inhalation and for applying heat, steam, or vapours to the human body or to the bodies of horses or other animals. Dated 4th October, 1871.
2698. W. E. Gedge, of London. A new or improved process for preserving animal and vegetable substances. Dated 11th October, 1871.

Letters Patent have been issued for the following :—

734. W. Purvis, of Marylebone. An improved medicinal biscuit. Dated 18th March, 1871.
853. E. Königs, of Westhofen, Westphalia. Improvements in treating pyrites and in obtaining sulphate of soda and other products. Dated 30th March, 1871.
972. D. Jackson, of Walworth, Surrey. Improvements in the manufacture of sulphuric acid and in the apparatus used therein. Dated 12th April, 1871.
987. C. Morfit, of London. Improvements in the manufacture of phosphates of lime, and in apparatus employed therein. Dated 13th April, 1871.
1033. W. E. Newton, of London. Improvements in the manufacture of mastics, cements or bituminous compounds, and in the application thereof among other uses for the formation of roads, pavements, floors, roofs, or for coating, enamelling or japanning metallic or other surfaces so as to protect them from the action of the air, acids, alkalies, alcohol, and other chemical agents. Dated 19th April, 1871.
1067. T. Rowan, of Glasgow. Improvements in treating and applying manganese compounds, and in applying apparatus therefor. Dated 22nd April, 1871.
1084. R. Irvine, of Leith, N. B. and C. N. Johnson, of Newcastle-upon-Tyne. Improvements in the treatment and preparation of phosphatic materials. Dated 24th April, 1871.
1181. A. M. Clark, of London. An improved process of oxidizing certain matters. Dated 3rd May, 1871.
1243. H. Chance, of Oldbury, Worcester. Improvements in retorts or apparatus for concentrating sulphuric acid, and for other like purposes. Dated 8th May, 1871.
1843. J. Townsend, of Glasgow. Improvements in producing lubricating oils from mineral and earth oils. Dated 14th July, 1871.
1897. F. Fenton, of Dewsbury, York. Improvements in the purification and utilization of sewage and other refuse matters, whether in a liquid, semi-fluid, or solid state, and in the extraction or production therefrom of "magma," "seak," grease, soap, tallow, or oil. Dated 20th July, 1871.
2080. B. Tanner, of New Brighton, Chester. Improvements in the manufacture of phosphoric acid and phosphorus. Dated 7th August, 1871.
2134. J. Anderson, of New-buildings, Londonderry, Ireland. Improvements in reducing oxides, and in obtaining iron, sodium, potassium, phosphorus, chlorine, or their compounds, and in apparatus therefor. Dated 14th August, 1871.
2219. W. R. Lake, of London. An improved galvanic battery and liquid to be used in such batteries. Dated 23rd August, 1871.

Specifications published during the month. Postage 1d. each extra :—  
1871.

289. A. V. Newton. Manufacturing lozenges. 8d.
297. P. Sherwin and another. Treating sewage matters, &c. 10d.
305. J. Church. Distilling. 1s. 6d.
364. E. McConville. Manufacture of sulphuric acid. 4d.
470. T. J. Smith. Chlorine. 4d.
487. J. R. Liston. Glove for medical operations, &c. 4d.
491. T. J. Smith. Nitric acid of ammonia. 4d.
514. A. Lloyd. Farinaceous food and baking powders. 4d.
526. R. Fennelly. Preserving animal substances for food. 4d.
568. J. Briggs and another. Aërated waters. 10d.
591. O. A. Ullithorne. Invalid carriages. 4d.
624. T. Gibb and another. Treating metallic solutions and precipitates. 4d.
701. J. Scharr. Liquid soap. 4d.
724. J. Paterson. Capsuling bottles, &c. 4d.
995. J. Townsend. Treating phosphates. 4d.

THE *Food Journal* says :—"Messrs. Fox and Co., of Manchester, may fairly claim to be public benefactors, inasmuch as they have robbed castor and cod-liver oil of their terrors. We know of few things more hateful than the anticipation of the matutinal dose of either one or the other, causing us to wake up with the taste in the mouth, even before the dose is swallowed. But Messrs. Fox have succeeded in making a nasty medicine, if not nice, at all events bearable, and that too without in any way destroying its efficacy."

## Exchange Column.

REVISED TERMS.—Announcements are inserted in this column at the rate of one halfpenny per word, on condition that name and address are added. Name and address to be paid for. Price in figures counts as one word.

If name and address are not included, one penny per word must be paid. A number will then be attached to the advertisement by the publisher of the CHEMIST AND DRUGGIST, and all correspondence relating to it must be addressed to "The Publisher of the CHEMIST AND DRUGGIST, Colonial Buildings, Cannon-street, London, E.C.," the envelope to be endorsed also with the number. The publisher will transmit the correspondence to the advertiser, and with that his share in the transaction will cease.

### FOR DISPOSAL.

- Eleven 4/6 Du Barry's Food. 30/. 20/446.
- Brand's "Chemistry," 3 vols., half calf, gilt, 10/. Cullen's "Practice of Physic," 2 vols., do. do., 6/6. Majendie's "Physiology," 1 vol., do. do., 5/. McCulloch's "Commercial Dictionary," with supplement, 1 vol., complete, do. do., 5/. Hardwick's "Photographic Chemistry," 3/6. Hunt's "Manual of Photography," 3/6. Gibbon's "Companion to the Chemical Chest," cloth, 9d. "Pharmacologist," 14, Bath-street, Newgate-street, London.
- Photographic Apparatus, Counter Scales, Bell-metal Mortar gold lettered Show Frame, Magic Lantern, Tincture Press, Telescope, good Tooth-stopping, Glycerine Jelly. Carrington, Wincanton.
- 14 lbs. Maw's No. 3 Flax Lint. 7lbs. Taylor's A 1 Lint. 10 lbs. Robinson's Lint. 7 lbs. (1 lb. bottles) Calvert's No. 1 Carbolic Acid, Crystallized. Money offers wanted. 11/446.
- Two 12 gallon Show Carboys, with cut stoppers, to exchange for two or three 6 gallon. Also the Fittings of a Soda Water Fountain and Marble Slab. J. Farmer, Putney. 25/446.
- Muspratt's "Chemistry," bound in 7 volumes. Nearly new. 42/. Galloway's "First Step in Chemistry." New. 5/. Warwick, Chemist, Hartlepool.
- A 1-gallon Maw's Percolator, with 3 tubes and wood rings, only once used—has a small crack, but does not leak. Offers wanted. Hasselby, Chemist, St. Leonards.
- Pulte and Epp's "Domestic Physician" (Homœopathic). New. Published at 8/; offered at 5/. J. Floyd, Bury St. Edmunds.
- Twenty-five Vols. "Pharmaceutical Journal" to be disposed of, well bound. 1st to 3rd Series complete. R. Ayres, Chemists' Valuer, etc., Bridgwater.
- Plate Glass Case as Fig. 22 Maw's catalogue; nearly new. Offers. A, 54, High-street, Stroud.
- Amateur's Printing Press for Chemist. 21/. Stoppered Store Bottles. Books cheap. Wyles, Bourn.
- British Pharmacopœia, 1867; Lescher's "Guide to Minor and Major Examinations." Offers requested. 5/446.

### WANTED.

- Bentley's "Botany," last edition. State price. 30/446.
- Percira's "Materia Medica." State particulars. 30/446.
- A Large Composition Mortar. Coles, Bournemouth.
- One of the old London Pharmacopœias. State price. 17/446.
- The last edition of Attfield's "Chemistry." Address, Alfred Mantle, 45, Pembroke-street, Oxford.
- Latest edition "Selecta de Præscriptis." State price. J. E. Parkinson, Blackburn.
- Second-hand Attfield's "Chemistry," last edition. J. Jones, Rochester House, Tunbridge Wells.
- A Twelve dozen Lemonade Rack. State price. A Cistern for Olive Oil. 10/446.
- Wanklyn and Chapman's "Water Analysis." State condition and price. Thomas Buck, Chelmsford.
- Two or three dozen 1½ gallon Black Glass Store Bottles. 7/446.
- A bid for "Pharmaceutical Journal," post free, on Mondays. Ditto for CHEMIST AND DRUGGIST, a week old. 4/446.



"Pharmaceutical Journals," July to December, 1868. J. Kemble, St. Austell.

"Pharmaceutical Journals," from July to December (both inclusive), 1866; November, 1867; August, 1868. W. L. Goldsworthy, St. Austell.

Johnson's "Lectures on Agricultural Chemistry and Elements of Agricultural Chemistry." J. Skidmore, Nantwich.

### Varia.

IN his important work on "Mechanics," the late Dr. Whewell, Master of Trinity College, Cambridge, wrote unconsciously the following verse: "There is no force, however great, can stretch a cord, however fine, into a horizontal line that shall be accurately straight."

A New York druggist and soda-fountain proprietor, hungering after a title, the New York *Post* suggests that he call himself in medical Latin a "fizzy-cus."

NEW YORK DRUGGISTS.—The following are given as a sample of the questions asked of the druggists of New York by the Examining Commissioners:—Who are you, any way? Are you man or woman; if so, why? Who invented drug Latin? How do you know? What is the difference between *materia medica* and medical materials. If you saw a blind dog go mad, would you help him to see his way out; if not, why not? Did you ever use Allcock's porous plaster; and if yes, did you ever get it off? And if yes, didn't it hurt? What commission do you allow the doctors on their prescriptions? Can you tell the ingredients of all your stock? If yes, what are peppermint lozenges and red-back tooth brushes made of? Suppose a man rushes wildly into your stores, tearing his hair, wiping his eyes, groaning severely, with both hands on his stomach and pallor in his countenance, what would you do? Would you ask him what in thunder he was making all that noise for, or would you endeavour to sell him some hair oil? If not, why not? What'll you give me if I'll sign your certificate? When will you hand me the money? And if now, how much?



THE official Returns continue to supply us with trade statistics of the most satisfactory character. Our national exports last month amounted to £19,947,873, against £17,550,799 in October, 1870, thus showing an excess of 2,397,074. In the face of these figures it is impossible to open a survey of trade in a special line without commenting on such striking general results, although latterly by great good fortune it has been our task, in common with others, to repeat a "thrice-told tale."

A strange incongruity is now presented in the Money Markets, the Bank of England sticks to its minimum rate of discount, 5 per cent., whilst money can be had elsewhere at 3½ per cent. This condition of affairs is altogether unprecedented. The policy of the directors is beginning to be rather freely criticised, and certainly the reasons for keeping money so "tight" are not altogether obvious. However, it must be borne in mind that political or financial alarms may obtain in France or elsewhere, or too many additions be made to the already abundant crop of foreign loans, and should such contingencies arise, the prescience of the Bank directors will then be fully recognised.

The drug market has not been characterized by any fluctuations of great moment since our last report, and business has been of a generally even character.

Opium has given way but slightly, and not to the extent that might have been expected, considering the large quantities that have arrived. Good soft Smyrna may be quoted at 19s. to 19s. 6d.; druggists' scale ditto at 17s. 6d. Cardamoms are scarce, and all that come to hand are eagerly taken at high prices.

Cantharides have risen considerably, and are quite 2s. per lb. dearer. At public sales four cases of Russian were

offered and bought in at 7s. 6d. The periodical sales of cochineal were held on the 2nd inst., when the large total of 2,208 bags was brought forward. The above quantity included several parcels in second hands, and as holders showed some desire to sell, 1,127 bags found buyers. Ordinary silver sold at a further decline of ¼d. per lb., and good at 1d. below last sales, black also sold at ¼d. to 1d. lower. Large stocks of camphor afloat, and full market supplies have failed to affect its value; the demand for refined is good, and prices remain firm at previous quotations.

BARKS.—Crown and grey are scarce, and command high prices. Calisaya has been in good demand, and all Quinine-yielding barks may be quoted much higher. At auction, on the 9th inst., out of 234 packages crown and grey, 223 sold; fair, broken short, to good fair, 2s. 4d. to 2s. 10d.; ordinary to good middling, 1s. 7d. to 2s.; one lot pickings, 7d.

ESSENTIAL OILS.—Aniseed very firm, at 10s. 9d. Cassia rather higher—20 cases sold at 4s. 6d. Cinnamon still scarce and dear. Fair supplies of Citronella have been available, and steady business has been done. Foreign varieties of Lavender have gone up, crops having turned out badly.

SPICES maintain a state of activity. Peppers, however, are hardly so buoyant, and with plentiful supplies there has been less inclination to buy. Prices, nevertheless, are well maintained. For Nutmegs full prices continue readily obtainable. Belladonna, Orris, and Pareira roots are scarce. Sumbul is wanting, and Gentian procurable, on better terms. Large quantities of Rhubarb have been offered, and much of inferior quality; 75 chests out of 228 found purchasers at last sales, fair 2s. 4d. to 2s. 10d, ordinary to good middling 1s. to 1s. 10d. Guinea grains have been gradually hardening in price, and on the 9th 26 bags sold at 34s. to 35s. 6d., being an advance of 10s. per cwt. on last month's quotations; worth, at latest moment, 40s. per cwt.

CHEMICALS.—Our predictions in reference to Iodine have been verified, and a rise of 3d. per oz. must be reported. Even at the present high figure but limited business can be done, and a well-known firm is holding for 2s. 6d. Present price of Potassii Iodidum, 32s. per lb. Quinines are higher and firm. British may be quoted at 7s. 9d., and Pelletier's at 7s. 8d.; the latter is very firm at the price, and a further advance may be anticipated. Tartaric and Oxalic Acids are dearer, and a heavy demand from the States for Brown and Grey Tartars has pushed up Creams considerably. Bleaching Powder is easier, and worth quite 1s. per cwt. less, but as buyers are anxious to secure forward deliveries, a return to former quotations may be anticipated. Sulphate of Ammonia more than holds its own, although we note the bringing forward of a new product called Azote Guano, said to possess equal fertilizing powers. Nitrate of Soda is rather unsteady, and 15s. 9d. would now be taken. The use of China Clay compounds has somewhat diminished, hence Alum is worth rather more money. The price of Glycerine will probably at no very distant date be advanced, as the foreign manufacture suffers from a scarcity of raw material. The respective preparations of mercury have experienced a slight drop during the month, and quicksilver stood at £10, but at latest moment it has again advanced to ten guineas.

DRY-SALTERIES.—Terra Japonica.—The import of Gambier for the last month has been much above an average, 2,700 tons having arrived. The deliveries have also been large, reaching 2,100 tons, leaving the stock 1,800 tons. Notwithstanding the large arrivals, prices have again somewhat advanced; sales have been made at from 16s. 6d. to 16s. 9d., "all faults," ex ship, and at 17s. to 17s. 6d. ex warehouse. Quotations have advanced £3 per ton for Cutch of the first quality. A good demand has prevailed for Shellac. Safflower has declined somewhat, and Turmeric has been rather inactive.

OILS.—There has been less demand for Linseed, and there are sellers now at £34 10s. on the spot. Refined Cotton in more request, and higher prices have been paid, whilst more inquiry has existed for Olive. The market for Coconut has been steady at £50 to £51 for Cochin, and at £38 10s. to £39 for Ceylon.

SPIRITS OF TURPENTINE.—American is firm at 49s. on the spot, 50s. being required for forward delivery. French has advanced to 48s.



## Monthly Price Current.

The prices quoted in the following list are those actually obtained in Mining-lane for articles sold in bulk. Our Retail Subscribers must not expect to purchase at these market prices, but they may draw from them useful conclusions respecting the prices at which articles are offered by the Wholesale Firms.]

## CHEMICALS.

	1871.		1870.	
ACIDS—	s. d.	s. d.	s. d.	s. d.
Acetic .....per lb.	0 4	to 0 0	0 4	to 0 0
Citric .....per lb.	3 0	0 0	2 4	2 4½
Hydrochlor. ....per ewt	4 0	7 0	4 0	7 0
Nitric .....per lb.	0 5	0 5½	0 5	0 5½
Oxalic .....per lb.	1 0	0 0	0 8	0 0
Sulphuric .....per lb.	0 0½	0 1	0 0½	0 1
Tartaric crystal ..	1 0½	1 7	1 3	1 3½
powdered ..	1 6½	1 7	1 4	0 0
ANTIMONY ore.....per ton	240 0	0 0	360 0	400 0
crude ..per ewt	34 0	38 0	44 0	45 0
regulus..	41 6	0 0	59 0	60 0
star ..	45 6	0 0	0 0	0 0
ARSENIC, lump.....	15 6	16 0	15 6	16 0
powder.....	6 9	7 3	7 0	7 6
BRIMSTONE, rough ..per ton	160 0	0 0	160 0	0 0
roll ....per ewt	10 0	10 3	11 0	0 0
flour.....	12 0	13 0	12 0	13 0
IODINE, dry .....per oz.	2 3	0 0	0 9	0 9½
IVORY BLACK, dry...per ewt.	0 0	0 0	0 0	0 0
MAONESIA, calcined..per lb.	1 1	0 0	1 2	0 0
MERCURY.....per bottle	200 0	0 0	189 0	0 0
MINIUM, red .....per ewt.	21 0	21 6	21 0	0 0
orange ....	32 0	33 0	31 6	0 0
PRECIPITATE, red ...per lb.	3 4	0 0	3 2	0 0
white ..	3 3	0 0	3 1	0 0
PRUSSIAN BLUE.....	0 0	0 0	0 0	0 0
SALTS—				
Alum .....per ton	140 0	150 0	145 0	150 0
powder ....	145 0	150 0	160 0	165 0
Ammonia:				
Carbonate .....per lb.	0 7	0 7½	0 5½	0 6
Hydrochlorate, crude,				
white.....per ton	520 0	560 0	480 0	560 0
British (see Sal Ammoniac)				
Sulphate .....per ton	460 0	480 0	325 0	330 0
Argol, Cape .....per ewt	60 0	90 0	55 0	73 0
France ..	0 0	0 0	40 0	50 0
Oporto, red ..	22 0	24 0	22 0	24 0
Sicily ..	0 0	0 0	0 0	0 0
Naples, white ..	0 0	0 0	0 0	0 0
Florence, white ..	0 0	0 0	0 0	0 0
red ..	0 0	0 0	0 0	0 0
Ashes (see Potash and Soda)				
Bleaching powd...per ewt.	13 9	0 0	9 3	9 6
Borax, crude ....	25 0	40 0	25 0	35 0
(Tincal) ..	47 0	65 0	45 0	60 0
British refnd. ....	95 0	0 0	68 0	70 0
Calomel .....per lb.	3 2	0 0	2 11	0 0
Copper:				
Sulphate .....per ewt.	25 6	26 0	23 0	25 0
Copperas, green ..per ton	55 0	60 0	50 0	60 0
Corrosive Sublimat...p.lb.	2 7	0 0	2 5½	0 0
Cr. Tartar, French, p.ewt.	97 6	100 0	88 0	90 0
Venetian grey ..	100 0	0 0	90 0	96 0
brown ..	90 0	95 0	0 0	0 0
Epsom Salts .....per ewt.	6 0	7 0	6 0	7 0
Glauber Salts ....	4 6	6 0	4 6	6 0
Lime:				
Acetate, white, per ewt.	12 6	23 0	12 6	23 0
Magnesia: Carbonate ..	42 6	0 0	42 6	0 0
Potash:				
Bichromate ....per lb.	0 10	0 0	0 5	0 5½
Carbonate:				
Potashes, Canada, 1st				
sort .....per ewt.	39 0	49 0	33 0	34 0
Pearlshashes, Canada, 1st				
sort .....per ewt.	47 0	48 0	43 0	44 0
Chlorate .....per lb.	1 6	0 0	0 11	0 0
Prussiate .....per lb.	1 8½	0 0	1 0	0 0
red ..	2 6	2 10	1 9½	1 10
Tartrate (see Argol and Cream of Tartar)				
Potassium:				
Chloride .....per ewt.	11 0	0 0	10 6	13 0
Iodide.....per lb.	32 0	0 0	12 6	13 0
Quinine:				
Sulphate, British, in				
bottles .....per oz.	7 9	0 0	6 3	6 4
Sulphate, French ..	7 8	7 9	6 1	0 0
Sal Acetos .....per lb.	1 2½	0 0	0 10	0 0
Sal Ammoniac, Brit. cwt.	43 0	44 0	41 0	42 0
Saltpetre:				
Bengal, 6 per cent or				
under .....per ewt.	32 0	32 9	23 0	29 0
Bengal, over 6 per cent,				
per ewt.	31 3	31 9	26 0	27 6
Madras.....	0 0	0 0	0 0	0 0
Bomb & Kurrachee p.ct.	0 0	0 0	0 0	0 0
European.....	0 0	0 0	0 0	0 0
gritish, refined ..	35 0	36 6	29 6	30 0
Soda: Bicarbonate, p.ewt.	14 0	0 0	10 6	0 0
Carbonate:				
Soda Ash.....per deg.	0 2½	0 2½	0 1½	0 2
Soda Crystals per ton	100 0	103 0	77 6	80 0
Hyposulphite...per ewt.	14 0	16 0	13 0	0 0

	1871.		1870.	
	s. d.	s. d.	s. d.	s. d.
Soda:				
Nitrate .....per ewt.	16 9	17 0	15 0	15 6
SUGAR OF LEAD, White, cwt.	39 0	0 0	39 0	40 0
Brown ..	26 0	0 0	26 0	28 0
SULPHUR (see Brimstone)				
VERDIORIS .....per b.	1 0	1 2	1 0	1 2
VERMILION, English...per lb.	3 2	3 4	3 0	3 2
China....	3 6	0 0	3 0	3 2

## DRUGS.

ALOES, Hepatic....per ewt.	70 0	220 0	60 0	160 0
Socotrine ..	120 0	280 0	100 0	220 0
Cape, good..	29 0	36 0	23 0	27 0
Inferior ..	22 0	28 0	16 0	22 0
Barbadoes ..	70 0	210 0	70 0	200 0
AMBERGRIS, grey.....oz.	25 0	30 0	25 0	30 0
BALSAM —				
Canada .....per lb.	1 4	0 0	1 0	0 0
Capivi ..	1 10½	1 11½	1 6	1 7
Peru ..	9 0	9 3	9 3	0 0
Tolu ..	1 11	2 0	2 2	2 4
BARKS—				
Canella alba ....per ewt.	15 0	25 0	15 0	30 0
Cascarilla.....	20 0	37 0	18 0	32 0
Peru, crown & grey per lb.	1 3	2 10	0 10	2 4
Calisaya, flat ..	3 2	3 4	3 0	3 11
quill ..	3 2	3 4	3 0	3 10
Carthagenia ..	0 10	1 8	0 9	1 9
Pitayo ..	0 10	1 6	0 10	1 6
Red ..	2 0	7 3	1 6	5 6
Bucho Leaves ..	0 4	1 0	0 3	0 6
CAMPHOR, China..per ewt.	70 0	0 0	75 0	0 0
Japan ..	75 0	9 0	75 0	77 6
Refin Eng. per lb.	1 2½	1 3	1 1½	1 2
CANTHARIDES ..	7 0	0 0	5 0	0 0
CHAMOMILE FLOWERS p.ewt	45 0	70 0	40 0	72 6
CASTOREUM .....per lb.	3 0	30 0	3 0	30 0
DRAOON'S BLOOD, lp. p.ewt.	100 0	210 0	90 0	200 0
FRUITS AND SEEDS (see also Seeds and Spices)				
Aniso, China Star pr ewt.	125 0	127 6	107 6	112 6
German, &c. ..	41 0	47 0	25 0	40 0
Beans, Tonquin ..per lb.	0 9	1 6	0 9	1 4
Cardamoms, Malabar				
good ..	9 6	10 0	10 0	11 3
inferior ..	7 6	9 9	8 0	9 6
Madras ..	3 6	9 6	5 6	10 0
Ceylon ..	3 0	3 4	2 8	3 3
Cassia Fistula..per ewt.	12 0	30 0	12 0	30 0
Castor Seeds ..	10 0	12 0	10 0	12 0
Cocculus Indicus ..	17 0	18 0	11 0	13 0
Colocynth, apple..per lb.	0 3	0 6	0 4	0 8
Croton Seeds ..per ewt.	70 0	75 0	95 0	102 6
Cubebs ..	21 6	23 0	25 0	30 0
Cummin.....	75 0	85 0	60 0	73 0
Dividivi ..	12 0	14 6	12 0	14 0
Fenugreek.....	11 0	22 0	12 0	15 0
Guinea Grains ..	32 0	35 0	24 6	28 0
Juniper Berries ..	15 0	18 0	10 6	0 0
Myrobalans ....	12 3	17 6	7 6	15 6
Nux Vomica.....	11 0	13 0	9 0	12 6
Tamarinds, East India ..	2 0	12 0	10 0	16 0
West India, new ..	12 0	30 0	10 0	17 0
Vanilla, large ...per lb.	30 0	42 6	32 0	37 0
inferior ..	12 0	28 0	25 0	30 0
Wormseed ..per ewt.	0 6	0 0	35 0	0 0
GINGER, Preserved, in bond				
(duty 1d. per lb.) per lb.	0 6	0 10	0 6	0 8
GUMS (see separate list)				
HONEY, Chili ....per ewt.	50 0	60 0	32 0	46 0
Cuba ..	35 0	50 0	22 0	36 0
Jamaica ..	50 0	56 0	31 0	52 0
IPECACUANHA ....per lb.	5 0	5 2	5 0	5 2
ISINGLASS, Brazil ..	2 6	4 6	3 0	4 10
Tongue sort ..	3 3	5 2	4 0	5 3
East India ..	1 6	4 0	1 8	4 3
West India ..	4 0	4 4	4 4	4 7
Russ, long staple	6 0	9 6	5 6	8 0
leaf ..	3 6	6 6	3 0	5 6
Simovia ..	2 0	3 6	1 6	2 6
JALAP, good ..	1 6	3 0	1 3	3 0
infer. & stems ..	0 6	1 5	0 6	1 6
LEMON JUICE ...per degree	0 1	0 1½	0 1	0 1½
LIQUORICE, Spanish per ewt.	35 0	37 0	0 0	0 0
Italian ..	40 0	60 0	40 0	60 0
MANNA, flaky ....per lb.	3 6	4 0	2 6	3 4
small.....	2 0	2 2	1 9	0 0
MUSK.....per oz.	18 0	36 0	16 6	32 0
OILS (see also separate List)				
Almond, expressed per lb.	1 4	0 0	1 0	0 0
Castor, 1st pale ....	6 5	0 5½	0 4½	0 5
second ..	0 4½	0 4½	0 4½	0 4½
infer. & dark ..	0 4½	0 4½	0 4½	0 4½
Bombay (in casks)	0 4	0 4½	0 4	0 4½
Cod Liver .....per gall.	5 0	6 0	5 0	6 6
Croton.....per oz.	0 3½	0 4½	0 3½	0 4½
Essential Oils:				
Almond .....per lb.	42 0	0 0	42 0	0 0
Anise-seed .....per lb.	10 6	10 9	9 5	9 6
Bay .....per ewt.	65 0	70 0	65 0	70 0
Bergamot .....per lb.	8 0	15 0	8 0	15 0
Cajuput, (in bond) per oz.	0 1½	0 3	0 2½	0 3
Caraway .....per lb.	5 6	6 3	5 6	6 3
Cassia ..	4 3	4 4	4 6	0 0
Cinnamon.....per oz.	0 10	3 0	1 0	4 6
Cinnamon-leaf..	0 2	0 4½	0 2	0 6



1871.				1870.				1871.				1870.			
s. d.				s. d.				£ s.				£ s.			
Essential Oils, continued:—															
Citronello.....per oz.	0	1 1/2	to	0	2	to	0	2 1/2	0	0	to	0	0	0	0
fine.....	0	6	..	0	0	..	0	0	33	10	..	34	0	0	0
Clove.....per lb.	2	4	..	0	0	..	0	0	33	0	..	33	10	..	0
Juniper.....	1	9	..	2	0	..	2	0	31	0	..	0	0	..	0
Lavender.....	3	6	..	6	0	..	4	3	28	0	..	0	0	..	0
Lemon.....	5	0	..	9	0	..	9	6	51	0	..	52	0	..	0
Lemongrass.....per oz.	0	2 1/2	..	0	2 1/2	..	0	3	50	0	..	0	0	..	0
Neroli.....	0	5	..	0	6	..	0	0	48	0	..	0	0	..	0
Nutmeg.....	0	4 1/2	..	0	10 1/2	..	0	7 1/2	47	10	..	48	0	..	0
Orange.....per lb.	5	0	..	7	0	..	7	0	49	10	..	50	0	..	0
Otto of Roses.....per oz.	12	0	..	21	0	..	20	0	49	10	..	0	0	..	0
Patchouli.....	4	0	..	0	0	..	0	0	49	10	..	0	0	..	0
Peppermint:									50	0	..	51	0	..	0
American.....per lb.	12	6	..	14	0	..	15	0	38	10	..	39	0	..	0
English.....	33	0	..	34	0	..	33	0	34	0	..	40	0	..	35
Rosemary.....	1	9	..	2	0	..	2	0	0	0	..	0	0	..	0
Sassafras.....	3	0	..	3	6	..	0	0	44	0	..	0	0	..	43
Spearmit.....	4	0	..	16	0	..	10	0	29	0	..	0	0	..	39
Thyme.....	1	10	..	2	0	..	2	0	34	5	..	34	10	..	29
Mace, expressed.....per oz.	0	1 1/2	..	0	3	..	0	2 1/2	34	5	..	0	0	..	29
Opium, Turkey.....per lb.	17	0	..	19	0	..	30	0	46	10	..	0	0	..	46
inferior.....	11	0	..	16	0	..	25	0	45	15	..	0	0	..	44
QUASSIA(bitter wood) per ton	60	0	..	70	0	..	70	0	50	0	..	50	10	..	47
RHUBARB, China, good and									0	10	..	0	0	..	44
fine.....per lb.	2	0	..	6	4	..	8	0	33	10	..	35	0	..	28
Good, mid. to ord.....	0	4	..	1	10	..	4	0	50	0	..	55	0	..	73
Dutch trimmed.....	0	0	..	0	0	..	10	0	38	0	..	0	0	..	73
Russian.....	0	0	..	0	0	..	0	0	38	0	..	0	0	..	35
ROOTS—Calumba.....per ewt.	25	0	..	42	0	..	40	0	49	0	..	0	0	..	30
China.....	24	0	..	26	0	..	35	0	0	0	..	0	0	..	0
Galangal.....	17	0	..	20	0	..	18	0	s. d.	s. d.	..	s. d.	s. d.	..	s. d.
Gentian.....	27	0	..	90	0	..	26	0	1	5 1/2	..	1	6 1/2	..	1
Hellebore.....	30	0	..	35	0	..	30	0	0	11 1/2	..	0	0	..	0
Oris.....	65	0	..	75	0	..	52	0	0	0	..	0	0	..	0
Pellitory.....	58	0	..	60	0	..	60	0	0	0	..	0	0	..	0
Pink.....per lb.	0	9	..	1	3	..	0	10	0	0	..	0	0	..	0
Rhatany.....	0	4	..	0	11	..	0	10	0	0	..	0	0	..	0
Seneca.....	5	6	..	5	9	..	2	10	0	0	..	3	0	..	0
Snake.....	1	6	..	1	7	..	1	0	0	0	..	0	0	..	0
SAFFRON, Spanish.....	83	0	..	41	0	..	52	0	0	0	..	0	0	..	0
SALEP.....per ewt.	170	0	..	200	0	..	110	0	0	0	..	0	0	..	0
SARSAPARILLA, Lima per lb.	0	8	..	0	11	..	0	7 1/2	0	0	..	0	0	..	0
Para.....	1	0	..	1	3	..	1	0	0	0	..	1	3	..	0
Honduras.....	1	2	..	1	6 1/2	..	1	0 1/2	0	0	..	0	0	..	0
Jamaica.....	1	7	..	2	10	..	1	9	0	0	..	3	2	..	0
SASSAFRAS.....per ewt.	0	0	..	0	0	..	0	0	0	0	..	0	0	..	0
SCAMMONY, Virgin.....per lb.	26	0	..	32	0	..	28	0	0	0	..	32	0	..	0
second & ordinary.....	10	0	..	25	0	..	10	0	0	0	..	23	0	..	0
SENA, Bombay.....	0	3 1/2	..	0	6	..	0	3 1/2	0	0	..	0	6	..	0
Tinnivelly.....	0	3 1/2	..	1	5	..	0	3 1/2	0	0	..	1	4	..	0
Alexandria.....	0	3 1/2	..	1	7	..	0	4 1/2	0	0	..	1	7	..	0
SPERMACE, refined.....	1	6	..	1	7	..	1	6	0	0	..	1	7	..	0
American.....	1	2	..	1	3	..	1	4	0	0	..	0	0	..	0
SQUILL.....	0	1 1/2	..	0	2	..	0	1	0	0	..	0	2	..	0
GUMS.															
AMMONIAC drop.....per ewt.	80	0	..	150	0	..	70	0	0	0	..	100	0	..	0
lump.....	55	0	..	75	0	..	50	0	0	0	..	65	0	..	0
ANIDI, fine washed.....	280	0	..	335	0	..	290	0	0	0	..	340	0	..	0
bold scraped.....	210	0	..	270	0	..	220	0	0	0	..	280	0	..	0
sorts.....	140	0	..	230	0	..	100	0	0	0	..	260	0	..	0
dark.....	85	0	..	180	0	..	75	0	0	0	..	100	0	..	0
ARABIC, E. I., fine															
pale picked.....	66	0	..	74	0	..	65	0	0	0	..	70	0	..	0
arts, gd. to fin.....	52	0	..	65	0	..	52	0	0	0	..	60	0	..	0
garblings.....	22	0	..	40	0	..	25	0	0	0	..	45	0	..	0
TURKEY, pick. gd. to fin.....	160	0	..	200	0	..	160	0	0	0	..	200	0	..	0
second & inf.....	85	0	..	155	0	..	85	0	0	0	..	155	0	..	0
in sorts.....	65	0	..	80	0	..	70	0	0	0	..	90	0	..	0
Gedda.....	33	0	..	44	0	..	38	0	0	0	..	44	0	..	0
BARBARY, white.....	0	0	..	0	0	..	70	0	0	0	..	72	6	..	0
brown.....	44	0	..	46	0	..	60	0	0	0	..	0	0	..	0
AUSTRALIAN.....	24	0	..	42	6	..	20	0	0	0	..	42	0	..	0
ASSAFETIDA, com. to gd.....	30	0	..	100	0	..	35	0	0	0	..	90	0	..	0
BENJAMIN, 1st qual.....	160	0	..	500	0	..	280	0	0	0	..	440	0	..	0
2nd.....	150	0	..	210	0	..	140	0	0	0	..	200	0	..	0
3rd.....	40	0	..	85	0	..	50	0	0	0	..	90	0	..	0
COPAL, Angola red.....	130	0	..	137	6	..	90	0	0	0	..	100	0	..	0
Benguella.....	100	0	..	112	6	..	80	0	0	0	..	90	0	..	0
Sierra Leone.....per lb.	0	3	..	0	10 1/2	..	0	4	..	1	2 1/2	0	4	..	1
Manilla.....per ewt.	20	0	..	38	0	..	30	0	0	0	..	50	0	..	0
DAMMAR, pale.....	60	0	..	65	0	..	50	0	0	0	..	55	0	..	0
EUPHORBUM.....	10	0	..	0	0	..	13	0	0	0	..	14	0	..	0
GALBANUM.....	500	0	..	250	0	..	160	0	0	0	..	260	0	..	0
GAMBOGE, pekd pipe.....	200	0	..	270	0	..	240	0	0	0	..	265	0	..	0
GUAIACUM.....per lb.	0	9	..	2	10	..	0	10	..	2	4	0	10	..	2
KINO.....per ewt.	60	0	..	90	0	..	60	0	0	0	..	140	0	..	0
KOWRIE, rough.....	17	0	..	35	0	..	30	0	0	0	..	40	0	..	0
scraped.....	30	0	..	75	0	..	42	6	..	100	0	0	0	..	0
MASTIC, picked.....per lb.	6	0	..	7	6	..	7	6	..	8	0	0	0	..	0
MYRRH, gd. & fine per ewt.	130	0	..	180	0	..	150	0	0	0	..	200	0	..	0
sorts.....	90	0	..	120	0	..	80	0	0	0	..	140	0	..	0
OLIBANUM, p. sorts	72	0	..	76	0	..	63	0	0	0	..	74	0	..	0
amber & ylw.....	64														







